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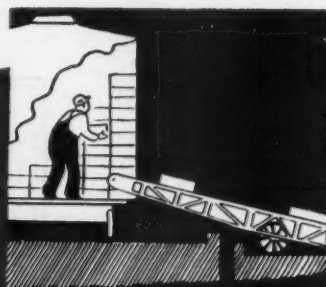


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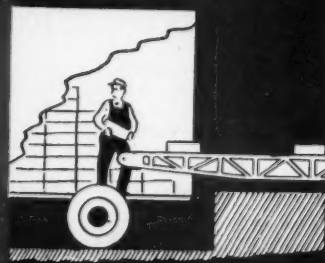
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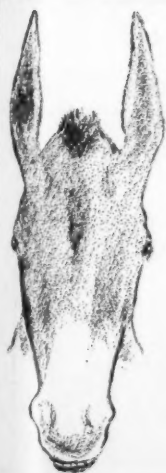
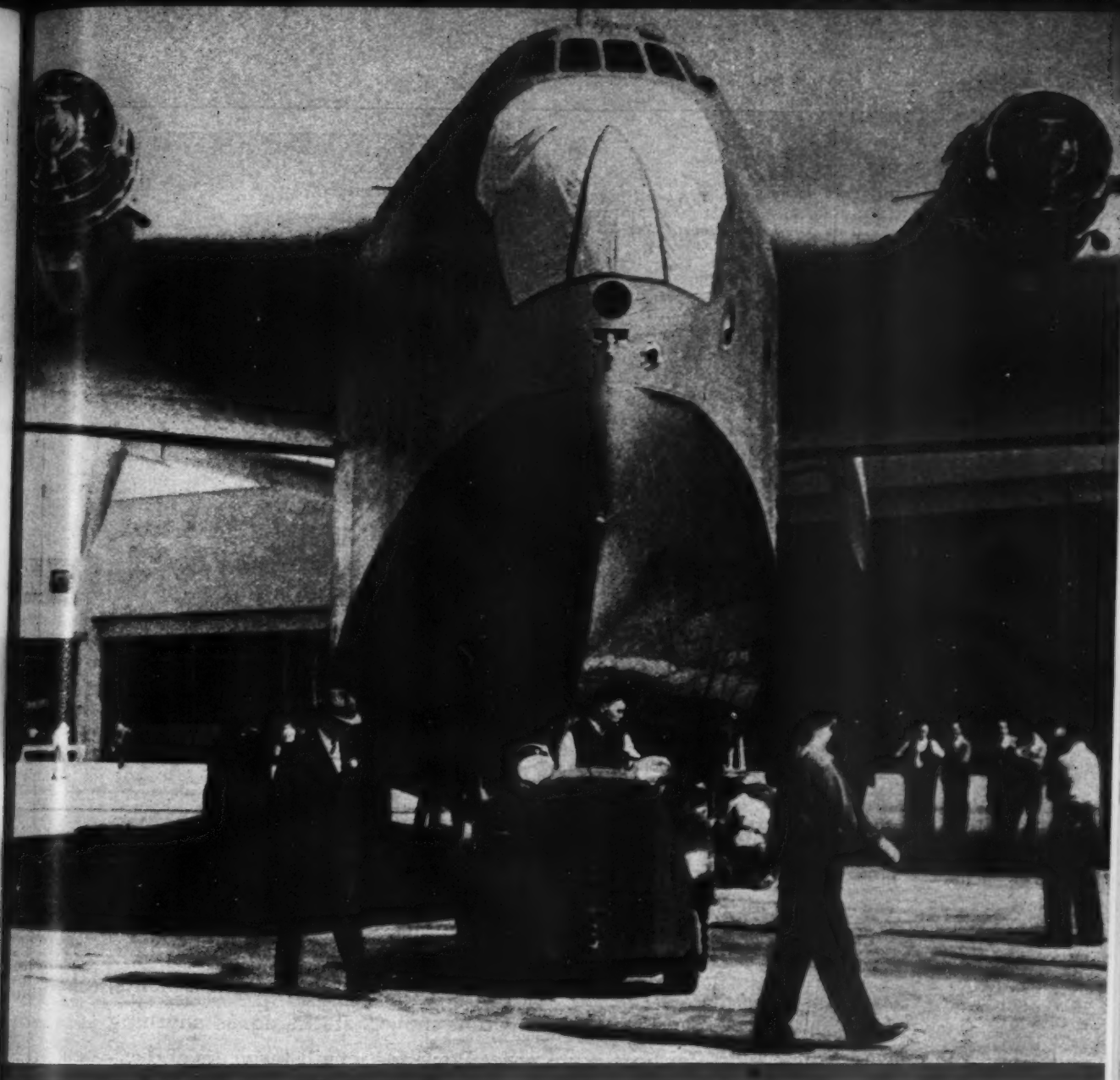
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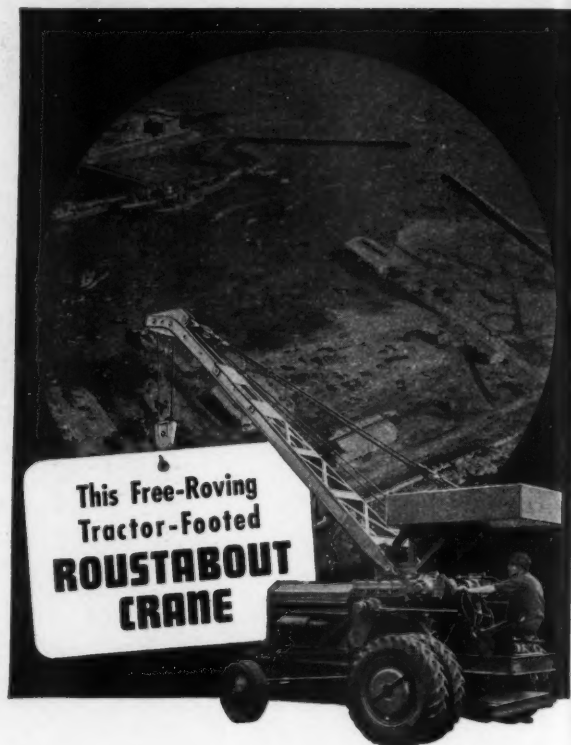
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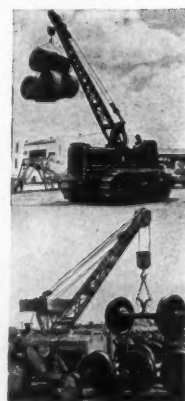
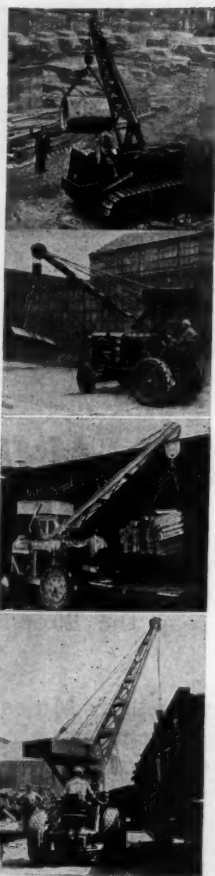
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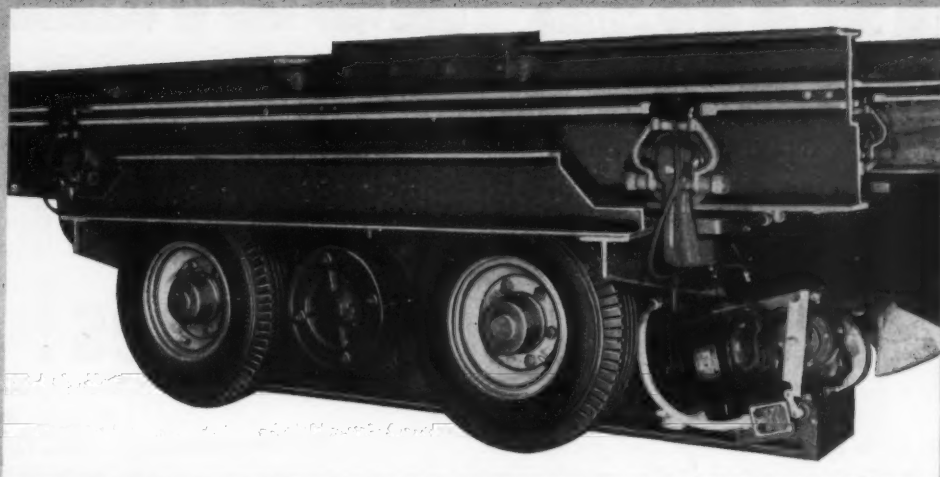
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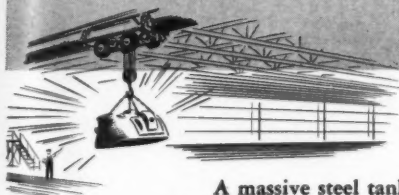
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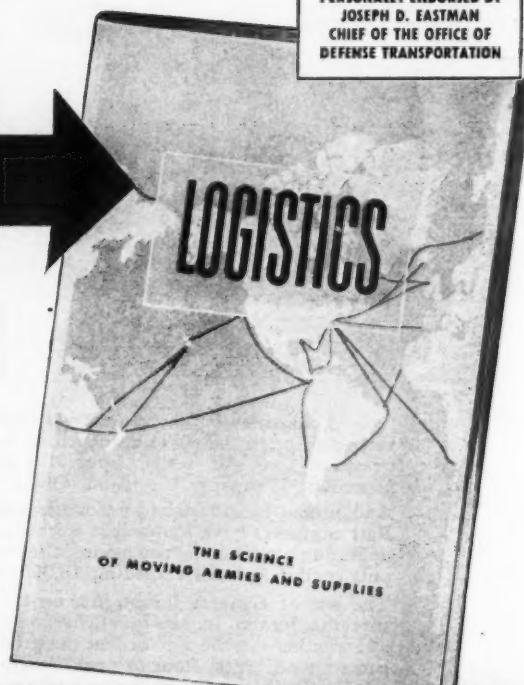


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12—D and W, July, 1943

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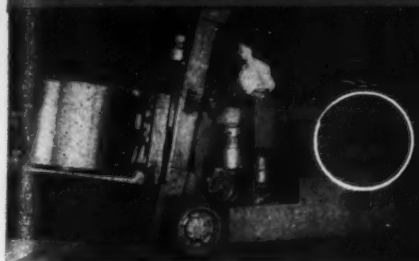
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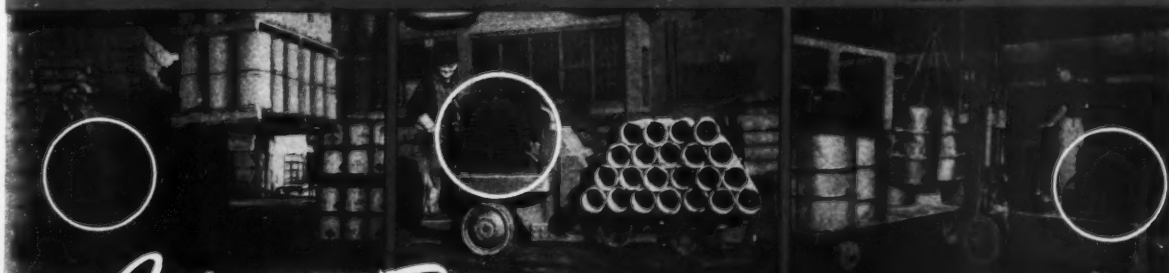
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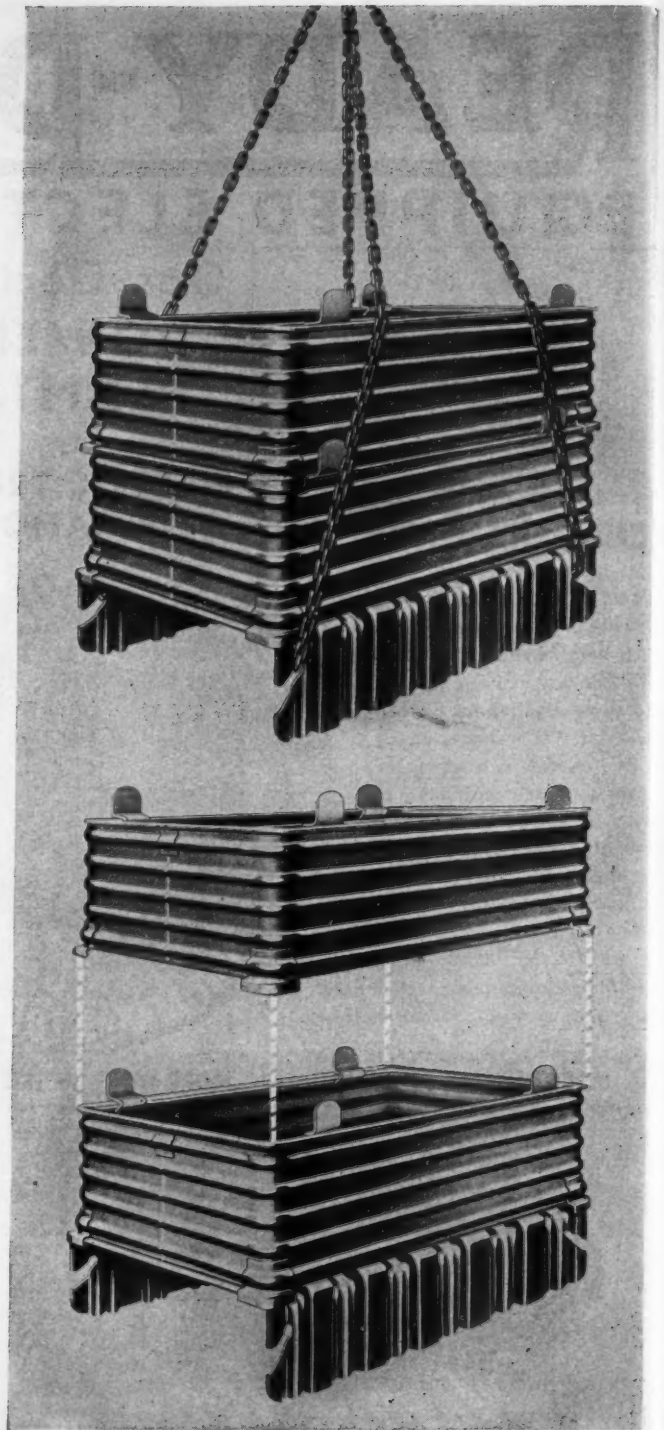
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Joseph B. Eastman, director of the Office of Defense Transportation, recently stated: "Automotive Transportation is absolutely essential to the winning of the War. Goods must reach their destinations and workers must get to their jobs . . . on time." Join the U.S. Truck Conservation Corps and keep your trucks in best possible condition. GMC dealers are pledged to help you.



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D and W, July, 1943—15

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comes Clark Fork Trucks
will be there delivering the
goods as they did in Africa

(SEE PHOTO BELOW)

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CLARK FORK TRUCKS AT WORK
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Editorials . . .

Two Important Features

TWO features of outstanding importance in this issue merit special mention. Consequently, we direct your attention to the opening instalment of Matthew W. Potts' *Modern Manual of Materials Handling Equipment* and to the survey made by this magazine into the possibility of a breakdown in the highway transportation of freight.

The immediate educational value of the manual is obvious, and its permanent value as reference material is equally clear. It is a constructive contribution to the standardization of nomenclature, which is sadly needed and highly desirable, and should help materially to bring about a better understanding of materials handling methods and equipment. In all likelihood, it will be as valuable several years hence as it is today.

While the scope of the motor truck transportation survey is more limited and necessarily more topical in character, it illuminates vividly two facts of tremendous importance, namely, that unless more new tractors and trailers are released by the Government soon for civilian use, and, also, unless a larger volume of repair parts are made available to truck operators, we are in imminent danger of a disastrous nation-wide breakdown of motor transportation.

The effects of such a calamity would be devastating to our national economy and morale. With respect to the war effort, it would be equivalent to a major military defeat.

Under the circumstances, shippers, carriers and warehousemen everywhere, individually, and collectively through their various trade associations, are warranted in petitioning Congress for immediate and effective relief.

o o o

Subsidies Are Dangerous

SUBSIDIES are dangerous politically, economically and morally. Politically, they can, and generally do, become instruments of government favoritism, punishment and control. Economically, they solve nothing. As former President Hoover recently pointed out: "Subsidies consist of taking money out of one pocket and putting it into another with an illusion attached that the cost of living has been reduced." Morally, subsidies are evasions and subterfuges.

The OPA's subsidy plan to control food costs is more likely to foster inflation than to prevent it. Moreover, it smells of politics. Living costs have risen 22.4 per cent from Aug. 1939 to March of this year. Weekly industrial earnings have increased an average of 62.4 per cent in the same period.

Wage inflation, as the *New York Times* states, "has been in large part responsible for price inflation. The drift of Administration policy is to extend still further the

relative and absolute gains of industrial labor since the outbreak of war at the expense of other groups in the community. For the Administration it is not a question of wage advances or subsidies, but of wage advances and subsidies.

"Thus it is feeding the inflationary fires at both ends. As against the dangers and evils of this policy, what are the gains? OPA is itself authority for the calculation that when the present 'rollback' of butter, meat and coffee prices has been achieved it will reduce the cost of living index by less than 1 per cent."

Many wonder why OPA persists in seeking to change established methods at a time when confusion is already great. To say the least, it weakens people's faith in their own government in a period of national crisis. That is serious and, if carried too far, could be disastrous.

o o o

Tomorrow's World

MUCH so-called post-war thinking seems to be based on a false premise. It assumes there is going to be a miraculous change in human nature. The mere end of hostilities will not make people temperamentally different than they are. The post-war world is going to be inhabited by pretty much the same kind of people that are in it now. People aren't going to change their prejudices or beliefs with the ending of the war.

New ideas will be welcomed by some and opposed by others for a variety of selfish reasons, while the vast majority will remain largely indifferent then as now. Has it ever been otherwise?

What happened after the last war—the war to make the world safe for democracy? Economic chaos, political skullduggery and another war. We are told by many eminent men that things will be different after this war. That is supposed to be what we are fighting for. It is a thing devoutly to be wished.

But let's not delude ourselves with too much wishful thinking. Let's face tomorrow's world as realistically and honestly as we can. By so doing we may save ourselves from a lot of crackpot theories and unpleasant experiences.

o o o

Global Merchandising

POST-WAR merchandising practices will have to be adapted to a world commerce that has been "domesticated" or to a domestic commerce that has been "globalized," an international traffic analyst told a group of export managers recently. It is an arresting thought. Time separations may no longer be trade hindrances in an air-minded post-war world. During the next few years, it is conceivable that the airplane may alter trade practices more rapidly and completely than the automobile did during the first three decades of this century.

MATERIALS HANDLING—

Bureau of Supplies and Accounts Has Developed Container and Materials Handling Section to Improve Handling and Packing Methods



Railroad locomotive train hoisting truck from wharf to deck of transport.

o o o

All pictures are official U. S. Navy photographs

o o o

Paper sacks are hard to stack because the stacks are slippery. By placing them on their side, and cross-tying the load stable piles are possible.



18—D and W, July, 1943

THE Naval Bureau of Supplies and Accounts is charged with the responsibility of getting supplies where they are needed, when they are needed, and in usable condition. For this reason, the Bureau has developed the Container and Materials Handling Section in order to promote more and better use of modern materials handling methods.

The need of storing various types of supplies so as to have them available for immediate distribution has led to the creation of larger depots, located strategically in order to facilitate distribution. But even with care being given to the proper location in relation to rail, inland water and other transportation facilities, serious labor shortages have developed in the areas in which these depots and yards are located.

However, as combat activities are

more modern materials handling methods and equipment are being provided for these naval activities.

Wherever possible, in the handling of supplies, modern materials handling equipment is being employed, and the accompanying illustrations show only a few of the hundreds of pieces of equipment which have been purchased, and are now operating satisfactorily, to cut time, eliminate accidents, save workers from fatigue, conserve space, and protect supplies from damage.

Attention is being given to the method in which supplies are packed by the manufacturer, so that the containers will protect the supplies both in transit and in storage. New and modern containers are being developed, stronger and better crates are being designed, weatherproofing of large shipping con-



Contractor's truck unloading from tail-gate direct to pallets. Pallets are placed in line for the cargo falls. Right, on pier apron, are crates of potatoes. Note fit of cargo to gear.

pressed, regardless of conditions, so too, the handling of supplies must go on, regardless of labor shortages. In order to overcome these shortages, more and

tainers, boxes, etc., is progressing, with the advancement in handling methods.

The modernization of handling requires the modernization of packaging; the two

These units were raised and placed on the semi-trailer by the swinging boom industrial crane truck



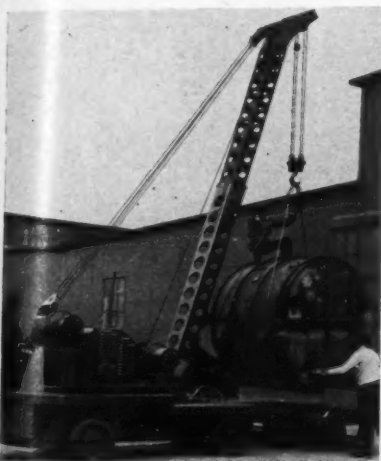
G- An Essential Naval Activity

By LT. COM. O. P. LATTU

go together hand in hand, and are being developed simultaneously by this new section of the stock division. To train

personnel, it has been necessary to produce moving pictures, film strips, lectures, and to develop educational pro-

On some operations, several pieces of equipment properly co-ordinated make for easy handling. Here a swinging boom industrial crane truck is lifting the load from the platform skid on a long low-lift platform truck.



Pallets with removable side racks can be used as containers for packages that will not tier on regular pallets. If the loads are kept below the racks they can be tiered.

grams. These have proven their value. The development of proper containers requires much research and experimentation. The war emergency is putting greater demands on containers of all types. They must be serviceable under



By placing removable collar on pallets, cylindrical articles such as projectiles can be quickly handled and stacked by fork trucks.

any and all conditions, regardless of where the Navy lands them on the shores of the seven seas.

Because of the multiple operations performed by the Navy, it is necessary to train the personnel in connection with all types of materials handling equipment. (Continued on page 121)

Twenty-five lead pigs strapped in a bundle weighing about 2,500 lb. can be picked up, transported and stacked easily by fork trucks.

Bar stock in steel rack storage is handled by overhead cranes using wooden stands at rack levels for assembling orders.



MODERN NAVAL METHODS

All pictures are official U. S. Navy photographs



By using 42 in. x 66 in. pallet, brooms can be palletized and high-stacked by fork truck.

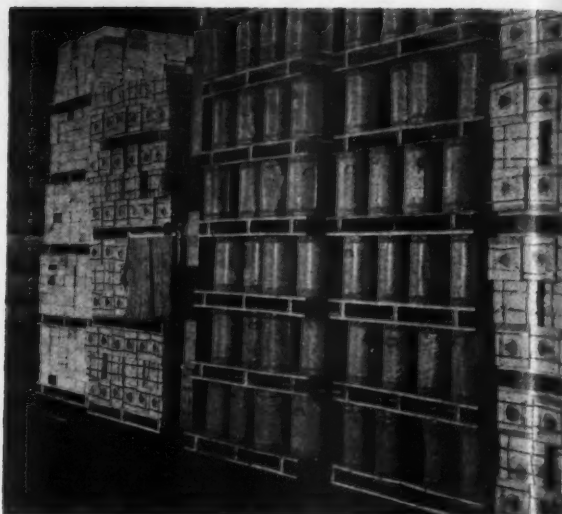


By storing concrete ballast, on pallets, it is available for quick handling when required.

If floor load permits, sheet steel can be high-stacked by slings and overhead frames.



20—D and W, July, 1943



Many items and miscellaneous stores can be stowed and quickly handled by the pallet and fork truck system.



By using swinging boom industrial crane and short dunnage, reels of cable can be quickly tiered.

Under high ceilings, use of racks for miscellaneous palletized unit loads utilizes cubical storage space.



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The End of Shooting War

IN EVERY MIND is the thought of Victory, but the word is only a symbol. Victory will mark the end of killing, and destruction—but it has no substance. Victory we must have, but having it will give us little—until we win the PEACE.

Production—construction—REconstruction . . . these will be on call when war is done, and these have been International Harvester's fields, without frill or ornament, for 112 years.

Today Harvester builds weapons for every theater of war. It builds many that are deadly, many that will be useless after Victory. But Harvester also builds many machines whose job in modern war is very like the work of peace. Take these powerful crawler tractors, for example. Tens of thousands of war-gearred Internationals serve in all branches of the Armed Services . . . as prime movers of big guns . . .

smoothers of bomb-torn landing-fields . . . clearers of jungle . . . builders of mighty emergency highways.

When it's time to carry on beyond a Victory, here's a combat weapon ready-made to fit the peace. War is toughening the tractor, as it toughens the soldier—readying a powerful force to help rebuild the world.

When guns are silent, the roar of the engines of *REconstruction* will be music to the ear. Count on *International Power*, devoted now to war but dedicated to the greater works of PEACE!

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D and W, July, 1943—21

Overhead Chain Conveyor System Saves Time and Manpower

PACIFIC FREIGHT LINES, one of the West Coast's largest common carrier trucking concerns, has introduced a novel streamlined note into a new mechanical handling system employed on the docks at its main Los Angeles terminal.

Designed for the purpose of moving platform trucks carrying l. t. l. merchandise from loading to unloading stations and returning the empties automatically to point of origin for re-loading, the system makes use of an overhead endless chain type of trolley conveyor to provide the power which propels the trucks.

Forming part of each truck is a telescoping pole, bearing a swivel hook at its top which is engaged to lugs or eyelets placed at frequent intervals on the power-driven conveyor line.

This line, which follows a rectangular course around the dock, was originally 698 ft. long, but after fully realizing the advantages of this handling method, the company extended it to a total length of 1,210 ft. The dock itself is 690 ft. long by 60 ft. wide.

The conveyor travels the entire length of the dock, curving around stairways and other building obstructions and pulls the 3-wheel and 4-wheel platform trucks wherever required. Speed of the conveyor can be varied between 50 ft. and 150 ft. per minute as needed and all trolleys and corner turns are fitted with anti-friction bearings to insure long life with minimum maintenance cost.

By H. H. SLAWSON

• • •

Nutting Truck & Caster Co., Faribault, Minn., provided most of the trucks and also designed the swivel hooks and pole attachments. The conveyor line itself is a Link-Belt standard truck haul conveyor, powered by a Link-Belt standard overhead conveyor drive and equipped with a variable speed regulator. Eight magnetic start and stop control buttons are conveniently located on the dock. Engineering problems were worked out by specialists of the Link-Belt Co. to meet the requirements of installation.

Most obvious of the new system's advantages is its elimination of the human factor for moving loaded trucks down the dock's 690 ft. and getting them back for the next trip. But company officials find also that it performs other practical and valuable services.

As reported to the Link-Belt Co., the conveyor method of propelling the platform trucks insures that each will make its trip from loading to unloading point in a specified time. Empty trucks will likewise be brought back without wasting time of freight handlers in going after them or waiting until one turns up.

The system also serves to keep delivery orders together and prevent misrouting while the possibility of damage to freight or injury to employees is decreased.

Being power-pulled, instead of hand-pushed over the floor, more merchandise is carried per unit load and congestion on the dock has given way to fast, orderly efficiency. This, in turn, has greatly increased the dock's capacity for rehandling freight and has made possible earlier departure of line haul trucks.

Pacific Freight Lines operates 860 pieces of equipment, of which 168 are pickup trucks. The company has 26 terminals at various California points, with headquarters at 2501 S. Alameda St., Los Angeles.

Leaving the 12.8-acre macadam-paved courtyard here at 9 a.m. in normal times, the pickup trucks return about 3.30 p.m. They average 1,100 pickups daily and can be contacted anywhere in the Los Angeles area within three to five minutes, through the company's telephone turret system.

On returning to the terminal, bills of lading are sorted by an expert blocker, who routes the merchandise to its destination with a block number. Guided by these, the driver breaks out his freight and loads it on platform trucks, designated by number for the various waiting line haul trucks.

Attached then to the moving conveyor chain, the platform trucks are carried automatically to the proper station elsewhere on the dock and after release from the conveyor, the loads are placed in the line haul trucks. On completion of this step the line haul driver is immediately dispatched on his way.

The manpower shortage has made more people materials-handling-minded to a greater extent perhaps than ever before. More than ever, more firms of all types are becoming aware of the need of better methods which will accomplish quick handling with the least amount of physical effort and in the shortest space of time.

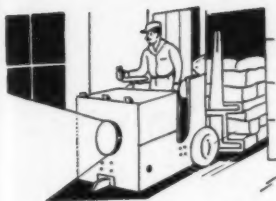
Moreover, it has been found, because of the war, more necessary than ever to coordinate various handling operations so as to expedite quicker loading and unloading of trailers and trucks, box cars, lighters, steamships and other common carriers.

Few to-day believe that the picking up and setting down of packages is necessarily efficient handling. Neither does the number of men involved in an operation indicate efficient handling. It is demonstrable that the most efficient handling invariably occurs in operations where the least amount of handling is necessary. The case cited above of the use of an overhead chain conveyor system is one more practical and convincing instance of that fact.

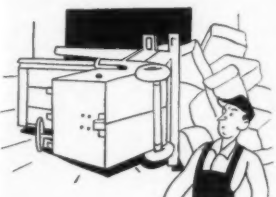


Courtesy Link-Belt Co.

... An overhead trolley conveyor chain system for moving platform trucks has increased efficiency and expedited work on the loading docks of the Pacific Freight Lines, Los Angeles, Cal.



Emergency Lights. A Midwestern manufacturer has a bright idea for emergency lighting. He equipped a number of his battery industrial trucks with headlights and conventional electric outlets. Then he installed 32-volt lighting circuits at various key points in the plant. During power failures each truck proceeds to a designated point, the line is plugged in and the emergency lights go on.



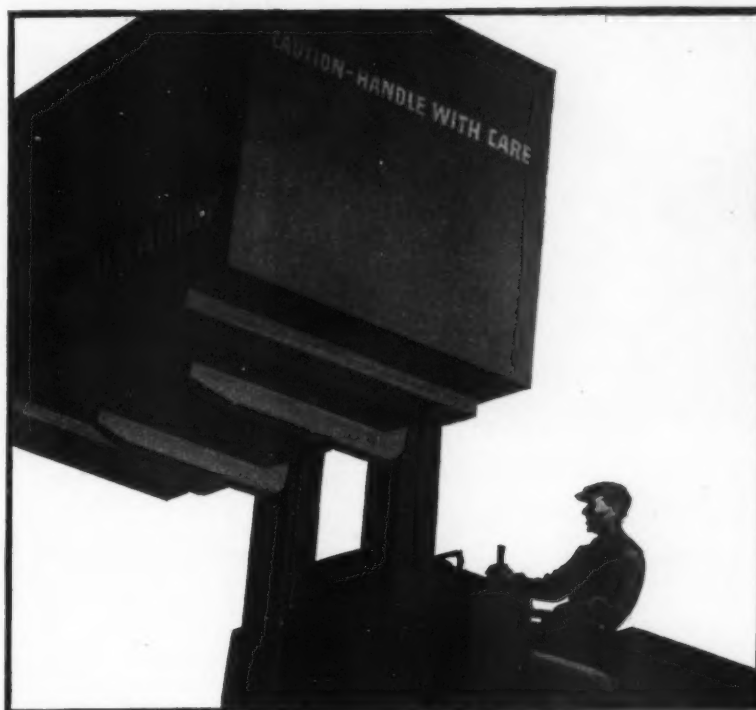
Turnover. One of the reasons experienced industrial truck operators prefer alkaline batteries is that they know the steel construction of these batteries withstands rough usage. They have had their share of accidents in which the trucks overturned without damage to the batteries. And they know by experience that the common electrical accidents don't damage them either.

Quick Battery Exchange.

An important reason for the ability of battery industrial trucks to provide dependable 168-hour duty lies in the fact that the batteries work in relays, as railroad locomotives do. Like the train, the truck maintains a schedule. Like the locomotives, one battery furnishes motive power while another is charged and serviced. And with modern power hoists, exchange of batteries is a matter of only a minute or two.

Edison Storage Battery Division
Thomas A. Edison, Inc.
WEST ORANGE, N. J.

POWER for Production



In production, it's what gets done that matters! And for *maximum* production there is nothing more important than *uninterrupted* handling of materials. Of course, man power is essential; so are plant and equipment. But none of these can work at full capacity unless there is a smooth, bottleneck-free flow of materials all the way through receiving, stores, process, assembly and shipment.

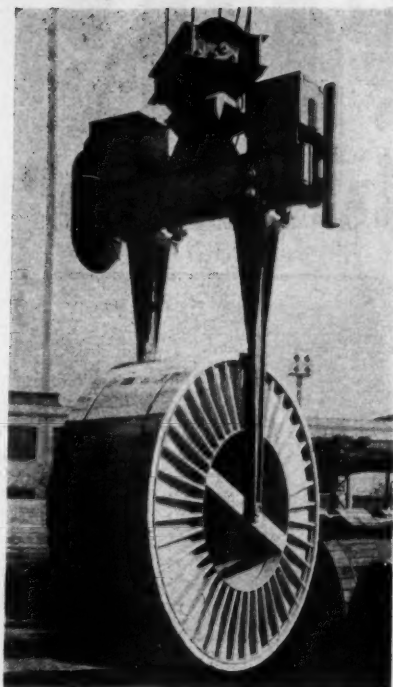
It's self-evident, therefore, that the battery industrial trucks in our war industries need the most dependable, trouble-free storage batteries that American inventive genius has produced. It's reassuring that so many of them—a majority in fact—are powered by the *alkaline* type of battery, an invention of Thomas A. Edison. No more durable, reliable portable power source is known.

INDUSTRY NEEDS THE DEPENDABILITY OF

Edison Alkaline BATTERIES

Don't assume you can't get equipment—Inquire.

D and W, July, 1943—23



Courtesy Western Electric Co.
... Cable reel grapple, operated from cab of overhead electric crane.

Shipping Problem Solved By Cable Reel Grapples

By CARLETON CLEVELAND

fair days, but during wet, snowy, and icy weather the difficulty was many times multiplied.

With the modernized handling of these reels, they are rolled through three doorways of the cable plant, then picked up by trailers of gasoline-powered shop mules, using a mechanism impelled by a generator which is operated by the truck's motor. On the trailer it rides to the storage yard, of which there are

two, and is dropped on a concrete runway, 510 ft. long with a span of 110 ft. adjacent to the storage space.

Each storage yard has its own shipping platform, railroad track, and runway, and each yard is served by a 7½-ton electric traveling crane, which is equipped with one of the cable reel grapples, shown in the illustration. A special motor, controlled from the crane cab by the operator, pulls the arms apart, which fit the holes in the sides of the cable reel. After they are in proper position, he pulls them together again so that the lugs enter the holes in the reel's center on both sides. The grapple is so constructed that it provides ample strength and retention to handle the reels from place to place. No accidents have been experienced during the time they have been used.

Without arduous labor the reels are now deposited on the runways from the trailers, and quickly picked up and set down in their proper storage location. When wanted for shipment, they are picked up and deposited on the shipping platform at the door of the car they are to occupy. Snow or icy conditions do not interfere with this method of handling. For night operation the yards are illuminated with floodlights at either end of the yards.

In addition to the speeding up of operations, the firm has also found it possible to utilize available space more efficiently, thereby increasing each yard's storage capacity.

Modern methods have also effected a more orderly system of storage which makes for better housekeeping and facilitates the taking of inventories.

● The Air Reduction Sales Corp., with headquarters in New York City, is now erecting a new oxygen plant on Patapsco Ave., at Shell Rd., Baltimore, Md. This is the third similar plant to be announced recently by the firm, the first being at Sparrows Point, and the second at Fairfield, Md. (Ignace)

AT the Western Electric Co.'s Hawthorne Works, Chicago, heavy cable reels are now handled from cable plant into yard storage and out of storage for shipment by means of specially designed cable reel grapples, used in connection with electric traveling cranes. The average weight of these reels, on which cable is wound, is 2½ to 3½ tons, although some weigh 5½ tons.

In these days of mechanical handling it is almost inconceivable to think they were formerly handled manually, but in earlier days they were placed in transfer box cars and carried along on a full gage railroad track which had been constructed from the cable plant to the storage yard. From this track the cars were shunted onto a depressed track, the yard surface being on a level with the platforms of the cars. The reels were then rolled out manually and placed in the desired sections of the storage yard, all of which required considerable labor, and was very hazardous.

Muscle power also was required when the reels were shipped. No matter what their location, if certain reels were wanted, they had to be taken out, regardless of the amount of work required. Many times other reels stood in the way and had to be removed. After the ordered reels were on the runway, they were rolled by hand to one of the shipping platforms, there being two, one on either side of the storage yard. A hoist lifted the reels onto the platform, and they were then rolled by manpower along and into the cars. It was bad enough on

WILL YOU

Sell

Rent

Loan or Pool

any of your materials handling equipment? It is needed by D and W readers, those with and without priorities, either to speed peak load periods or to take care of plant expansions.

If any of your equipment is not being used and is in good condition, it should be made available to someone who needs it. If it is used only part time, it may still help someone near you.

Loans or pools must of necessity be controlled locally but even in such cases D and W can act as a clearing house of information for the shippers, carriers and warehousemen it serves.

There will be no charge to anyone, nor can we accept any responsibility whatsoever for the condition or value of the equipment involved or for its eventual disposition. The plan is purely of a war service nature and its success depends entirely on your ability and willingness to cooperate.

Our research department will undertake the task of tabulating all information sent in and of communicating it to potential buyers or users. Be sure to mention the make, model, type, age, capacity and condition, also whether you wish to sell, rent, loan or pool the equipment.

If you wish to buy used equipment tell us about it, too, and if this plan succeeds we may be able to help you.

MERCURY

Material Handling Equipment

Speeds Production on the Industrial Front—

Elevating Platform Trucks

Mercury Elevating Platform Trucks are available in the following models:

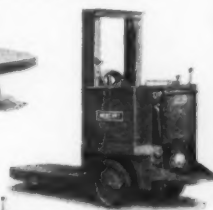
"Junior" Models: Low and high lift types. 4000 lbs. capacity. Compactly designed for work in confined areas.

"Senior" Models: Low and high lift types. Rugged design, 4000 lbs. capacity.

"Standard" Models: Low and high lift types. 6000 lbs. capacity. Sturdy, rugged design.



← **"JUNIOR" LOW LIFT**
4000 lbs. capacity



↑ **"SENIOR" HIGH LIFT**
4000 lbs. capacity



← **"STANDARD" HIGH LIFT**
6000 lbs. capacity

Fork Trucks

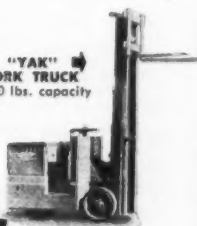
"Jeep" Sit Down, Center Control Fork Truck. 2000 lbs. capacity. Compact design affords easy manipulation in confined areas.

"Yak" Center Control Fork Truck. 4000 lbs. capacity. Rugged design.

"Yank" Center Control Fork Truck. 6000 lbs. capacity. Designed for tough continuous service.



← **"JEEP" FORK TRUCK**
2000 lbs. capacity



↑ **"YAK" FORK TRUCK**
4000 lbs. capacity



← **"YANK" FORK TRUCK**
6000 lbs. capacity

Tractors—Trailers

"Tug" Electric Tractor: A powerful compact tractor available in "twin-wheel", and "4-wheel" models, medium or heavy duty

"Banty" Gas Tractor: The most compact tractor made, yet develops a draw bar pull in excess of 2000 lbs. Thousands now in use.

Trailers: Available in castor or 5th wheel steer, platform or side dump types.

For detailed information on Mercury tractors, trailers, and lift trucks, request Bulletin-230.



← **"TUG" ELECTRIC TRACTOR**
Max. D.B.P. 2500 lbs.



→ **A-310 CASTOR STEER TRAILER**



← **"BANTY" GAS TRACTOR**
Max. D.B.P. 2300 lbs.

MERCURY

TRACTORS
TRAILERS
LIFT TRUCKS

MANUFACTURING CO., 4104 S. Halsted St., Chicago

A MODERN MANUAL OF MATERIALS

Introduction

THE war emergency has created a man-power shortage and an unprecedented need for quicker and more efficient methods of moving and storing materials. Until a few years ago, the term materials handling meant little or nothing to the majority of warehousemen, or to transportation and industrial executives, but the need of saving time, space and man-power has forced a new appreciation of better materials handling methods and equipment.

Modern strategy is based on a war of movement. This means not only the movement of troops in the field, but the movement of supplies from points of production through various storage areas and ports to the ultimate theatres of operation.

Because of the rapid expansion of the armed forces, educational programs have had to be instituted to develop officer and civilian personnel to expedite the handling, transportation and storage of supplies. These educational programs have been materially handicapped by not having satisfactory text books and manuals in up-to-date forms, easily comprehended by the average personnel, whether officer or civilian. This was especially true in connection with materials handling, as the available books, in some cases, are obsolete and in other cases too cumbersome for ready reference.

It has been necessary to teach materials handling to classes of several hundred. The writer personally has found it difficult to present the subject briefly and consisely with the materials available and, at the same time, cover the field in a thorough manner. Under present circumstances, certain operations and types of equipment which have been placed in service in the warehouses of the armed forces have received considerably more publicity and emphasis than other types of equipment just as important. While film strips and motion pictures have been developed during the past few months, and while manuals have been written by various branches of the service, they have not been complete, and have seemed to stress the fork truck and pallet system of materials handling almost exclusively.

In an endeavor to meet the need of a concise, simple and ready reference book on materials handling, covering all types of equipment, the writer has prepared for serial publication in *D and W*, appropriate copy for a Modern Manual of Materials Handling Equipment. Instead of using photographs showing particular makes of equipment, line drawings have been prepared to show the type of equipment, rather than a particular make.

We present herewith a number of different types of equipment used for a wide variety of handling operations. We shall present additional types each month. For the present, we shall not attempt to correlate this information alphabetically. We believe it will be more practical to cover first various materials handling operations of immediate value to a majority of our readers.

We wish to emphasize that there is no one type of equip-

ment that can meet every materials handling requirement. There is, however, a definite need of nomenclature that can be used universally. There is a tendency at present to call various types of equipment by nick-names in different localities. This leads to confusion in requesting the purchase of equipment, in the preparation of manuals, and in issuing orders, particularly when military personnel is involved, where there is considerable transfer from one locality to another.

For example, caster type trailers are called "flats", "floats", "trucks", etc., while tractors are called "bugs", "jitneys", "trucks", "locomotives", and similar names. Fork trucks are frequently termed "scooters", "jitneys", "chisels", "hoists", "lifts", "tractors", and other confusing names. These trick names are applied to many types of materials handling equipment.

In compiling the material for this cyclopedic guide it has been our desire to make it as authoritative as possible. Reference, therefore, has been made to a number of publications, among which are *Material Handling Cyclopedic*, published by Simmons-Boardman Co., 1921; *The American Association of Port Authorities' Port Dictionary of Technical Terms*, published in 1940; *Mechanical Handling and Storing of Materials*, published by D. Van Nostrand Co., as prepared by George Frederick Zimmer, 1922; *Materials Handling in Factories*, published by Industrial Extension Institute, and prepared by William F. Hunt, 1922; also Section 17, on "Handling of Materials", in the *Cost and Production Handbook*, prepared by the writer, edited by L. P. Alford, and published by Ronald Press Co., 1934; and others.

As we describe the application of various types of materials handling equipment, we will endeavor to cover the usual rather than the unusual, and while many types of materials handling equipment can be used on a number of different operations, we shall not attempt to point out all of these uses, but generally the common use for the particular piece of equipment.

While the drawings used may show a certain unit on a particular operation this should not be understood to mean any limitation of application of the equipment nor should it affect its nomenclature. For example, the sketch of a capstan below shows a piece of equipment which is often called a "car-puller" and shows the equipment in the act of moving or spotting cars, but the correct nomenclature for this piece of equipment is a capstan, because it can be used for pulling cars, boats, trucks, or for hoisting, and also in a number of other ways where pulling power is required.

Similarly, we could take each illustration and describe multiple operations for it, but space will not permit, and it is really unnecessary. We believe the readers of *D and W* will find the presentation of a Modern Manual of Materials Handling Equipment of practical value, and we shall welcome your comments.—Matthew W. Potts.

LS HANDLING EQUIPMENT

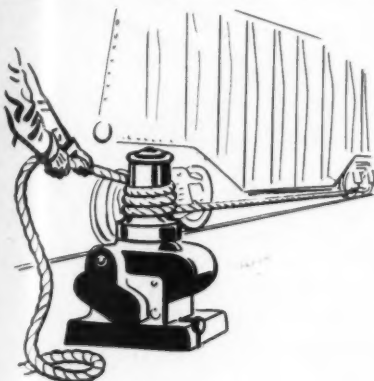
By MATTHEW W. POTTS
Materials Handling Editor

• This modern manual on materials handling equipment will be published serially each month in D and W exclusively. Each major type of materials handling equipment will be named, defined, illustrated, described and its usual applications explained.

Capstan

Definition—A stationary, vertical shaft, concave drum machine for winding rope, cable or chain, and used for hoisting or haulage purposes.

Description—In operation, a 'capstan' can be hand or power operated. The



Capstan

illustration shows an electric-power operated unit. If hand-operated the drum is usually rotated directly by men pushing on bars set regularly around the capstan head at the top of the drum. The men walk in a circle while operating the capstan and step over the ropes leading horizontally to and from the drum. Steam operated capstans are usually driven by non-reversing steam engines, connected by worm gearing. Electrically operated capstans are driven by electric motors, through gearing. A pawl ring at the bottom of the drum has paws dropping into the teeth of a ratchet ring set in the foundation to prevent overhauling. The hauling rope, cable or chain is connected to the load to be moved, and wound around the drum a few times. While the capstan is revolving a slight pull on the free end will keep it from slipping. Ridges on the drum called whelps also help to prevent slipping.

Application—Capstans can be used for pulling cars, barges, ships, raising anchors, and many other similar operations. Also for hoisting through a series of blocks, pulleys, etc.

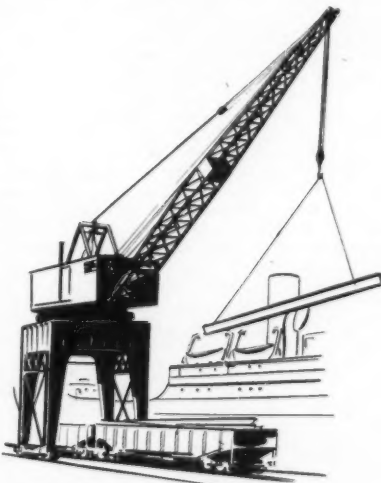
Gantry Crane

Definition—A crane or hoisting unit mounted on a gantry, i.e., any frame or structure spanning or bridging an intervening space. Gentries may be arched, bridged, full or half.

Description—A gantry crane is an adaptation of the overhead type of crane applied to outdoor service, where there

is no permanent elevated structure on which to install a crane. The crane bridge is mounted on trestles, having legs which are generally constructed with wheel trucks for operating on tracks, in which case the term "Portable Gantry Crane" is used. If the trestles rest directly on the ground or footings the term "fixed gantry crane" is used. This type of crane is made up to fit particular locations, and has been constructed with span upward to 200 ft. or more. The gantry may have a trolley running on the bridge, carrying a hoist. This is the most common form and is what is generally meant by "gantry crane." However, the gantry might have mounted on its bridge, either in a fixed position, or on a travelling carriage, a stiff-legged derrick, a rotating pillar or jib crane, or a hammerhead crane, etc., as auxiliary equipment.

Application — Because this type of crane spans the area over which it operates, it has been particularly applicable to handle operations in storage yards, at docks for handling bulk materials such



Drawings by Harry Johnson

Gantry Crane

as ore, coal, limestone, coke, cement and other raw materials. It has been equally well adapted to railroad storage and transfer yards for general purposes, and for transporting heavy freight; as well in shipbuilding both for the fitting of ships and for the handling of cargo.

• • •

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Tractor Trailer Train

Definition—A system of hauling with a self-propelled motor power unit, and a series of individual load carrying trailers, for transporting loads in trains.

Description—Various types of tractors can be used and many types of trailers.



Tractor Trailer Train

These are described individually under "Tractors" and "Trailers."

Application—Tractor trailer trains can haul heavier tonnage than carrier type trucks of equal h.p. capacity, and can be operated in trains up to the total drawbar pull of the tractor. The number of trailers one tractor can keep in operation depends upon working conditions, such as length of haul, nature of material and weight of load on trailer. Under normal operating conditions one tractor should keep three sets, or fleets, of trailers occupied, i.e., one loading, one under way and one unloading. On a number of operations four trailers to the set make an ideal operating unit. Tractor trailer trains should be used on hauls of 150 ft. or more. The maximum length of haul will depend entirely upon economy of operation, physical conditions to be met, and number of drops or stops involved.

Fork Truck

Definition—A cantilever type of industrial truck, either gasoline or electrically operated, with vertical uprights, and elevating back plate, equipped with two or more forks, of sufficient length and thickness for use with various types of pallets.

Description—Fork trucks are built on the cantilever principle, with loads being carried supported in front of the vertical uprights, and can either be of the telescoping or non-telescoping type, generally provided with a forward and backward tilt, supplied in capacities of 2,000 lb. to 18,000 lb. The load is seldom carried on the bare forks, but is generally

• This ready reference cyclopedic guide has been designed to promote better understanding of materials handling methods and equipment and to encourage the standardization of nomenclature.

loaded on to pallets which are picked up by the forks mounted on the elevating back plate, and these forks are hoisted by means of direct chain lift or hydraulic and chain lift combination. The load is carried either directly on the forks or the pallet and counterbalanced by the weight of the truck.

Application—Fork trucks are used generally for the handling of palletized unit loads, either in direct shipment from



Fork Truck

manufacturer to consumer or those which have been palletized within the warehouse or plant where the truck is operating. It is used most successfully for elevating of palletized loads into storage, but also on a number of industrial handling operations, of palletized loads between operations. They have been used aboard ship, on barges, on piers, in warehouses, freight terminals, industrial plants, and hoisting heavy containers into airplanes, etc. In yards which are not covered with hard surface this type of truck should be equipped with pneumatic tires, in order to operate efficiently. While fork trucks may occasionally be used as tractors, their greatest efficiency is obtained in their utilization for loading pallets onto or off trailers, trucks, railroad cars, etc. They should not travel with individual loads for distances of more than 200 ft. If the operation requires longer travel, the fork truck should be supplemented by tractor trailer trains for the long haul, using a fork truck at each end of the haul for loading, unloading, and stacking. Fork trucks should not be used as tiering machines or vertical stackers for supporting the load for hand storage. They are generally used with pallets although they can be used for handling boxes or containers equipped with skids or can be used with short dunnage in the handling of boxes, bales, reels, and other shape containers or packages.

Apron Conveyor

Definition—An apron conveyor is practically a continuous carrying surface, made up of wood or steel slats, propelled by one or more strands of chain, and supported by the chain or additional rollers, and forming in effect a moving table.

Description—A continuous wooden apron conveyor, as shown in the illustration, is made up of slats set close together. This type of construction is very widely employed for handling heavy, miscellaneous packages. The slats are usually attached to roller chains, which run in steel guides. By running the chains in guides, upward or downward curves can be made in the path of the apron, thus adapting it to many purposes, where combination of horizontal and inclined runs are required. For heavy duty apron conveyors, wood slats can be fastened to malleable iron or steel chain, not fitted with rollers. In this construction, large plain or flanged wheels are fastened at intervals to the ends of the slats, the rollers serving to guide and support the apron, while the chain merely transmits the driving pull to the load. If this type of conveyor is mounted on a movable frame, it is called a portable apron conveyor.

Application—Apron conveyors for the handling of merchandise or packaged materials in transit on wharf sheds or through storage areas are generally of the wood and chain type construction, and are used as mobile floors for continuous transportation. The load can be placed directly on the aprons or can be placed on the aprons on box type trucks, dollies, etc. A great many different styles and modifications of apron conveyors are in use to meet the various physical conditions of industrial operations. Those of wood are particularly adapted to handling packaged materials or bulky articles, while the steel pan type aprons are especially applicable to heavy loose material to serve conditions

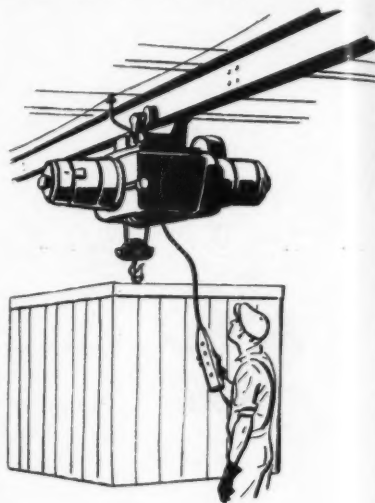


Apron Conveyor

of heat as in lehrs, or annealing furnaces, or for other vigorous service when wood is structurally unsuited to the conditions. Much ingenuity has been displayed in development of special aprons for unusual uses. Cleats, arms, or cradles are sometimes applied to the apron slats to adapt them to handling packages of awkward shape, or to prevent the articles carried from sliding or rolling when the apron is used as an inclined conveyor. The length of conveyor depends entirely upon the ultimate strength of the chain, size of motor, etc.

Electric Hoist

Definition—This is a term applied to any hoist driven by an electric motor. More specifically, the term is applied



Electric Hoist

also to a small or medium capacity, self-contained electrically operated drum hoist, hung on or built into a monorail trolley. Spur, worm and planetary gearings are employed.

Description—Electric hoists of several designs have been developed for multiple uses, and because of the ease of control, they have a number of advantages, particularly if the trolley is self-propelled as shown in this illustration. Here the complete hoist, its lifting unit, propulsion unit, etc., are controlled by push-button switches by the operator from the floor. Hoists are made with several types of hoisting mechanisms, such as chain and cable, but in most cases, cable is used. The cable can be wound on to single or double drum, and the units can be obtained in capacities from one to five ton with double strand hoists, and seven to twenty ton with four-strand hoists. A number of hoists are equipped with variable speed motors, and as previously stated, they can be either mounted on a mono-rail, self-propelled trolley or hand-propelled trolley, or they can be suspended in a fixed position. Where the trolley is self-propelled it is best to have the trolley equipped with some type of brake and the hoist should be equipped with limit stops.

Application—Electric hoists can be used on many operations, and can be suspended from fixed locations, jib crane booms, monorail, bridge cranes, and can

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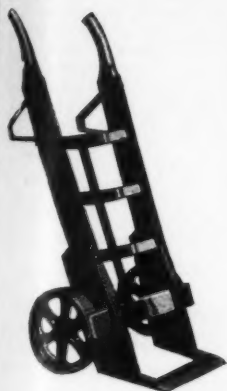


Fig. 65—No. 14BXH

Popular heavy duty Stevedore truck. Extra strong construction, easy balance, large pressure-lubricated roller bearing wheels.



Fig. 16-24

Western Pattern Truck with heavy steel, rugged hardwood frame and stein bent handles. Two center straps.



Fig. 100 Barrel Truck

Strong yet unusually light. Adjustable hook for barrels of different heights. A real time-saver.

Nutting

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QUALITY ALWAYS WINS!

When the minutes are precious—when every unit *must* stand up to the strains of rush production—then is when Nutting quality and time-proven dependability show up the strongest! In thousands of plants Nutting Trucks are doing their part to meet or beat production schedules. "Nutting" is better! Completed trucks are furnished in accordance with WPB regulations. Rubber tires available only as authorized by WPB.

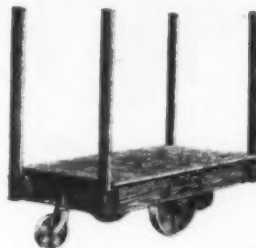


Fig. 11 Balance Type Truck
The veteran utility truck. Hardwood frame, platform, stakes. Turns sharp corners, swivels in own diagonal length. 7 sizes.



Fig. 560 Swivel Caster
Nutting makes Semi-Steel and Rubber Tired Casters of every size and type.



RK Wheel With Hub Guard
Keeps grease in and dirt out—prevents damage to clothes or merchandise.

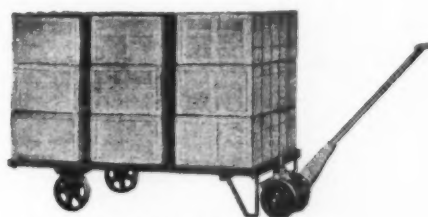


Fig. 419 Jack—Fig. 421 Live Skid
Provides low-cost storage for merchandise that must be quickly moved at any time. Many advantages—compare before you buy.

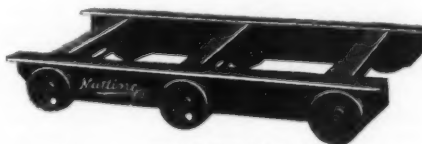


Fig. 363 Steel Dolly

Balance Type. Heavy angle steel welded frame. Semi-Steel or rubber tired wheels. One of many types with capacities up to 10,000 lbs.



Fig. 136 Non-Tilting Bar Handle Truck
Capacity 2500-3000 lbs. A proven veteran for all-around service. Pressure-lubricated roller bearing wheels, heavy duty, rubber tires. Range of sizes.

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Ask for Prices on any of the trucks illustrated, or send for Bulletin 41-G and tell us what you need. Representatives in principal cities. Consult your telephone directory or write direct to

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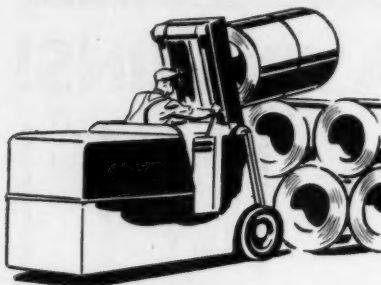


be used wherever hoisting is required, such as unloading operations, the placing of materials in storage, for use in foundries, machine shops, refrigeration plants, motor repair shops, and many other installations.

Ram Truck

Definition—A cantilever type of industrial truck, either gasoline or electrically operated, with vertical uprights and elevating back plate, equipped with a ram for carrying loads.

Description—Ram trucks are built on the cantilever principle, with the load



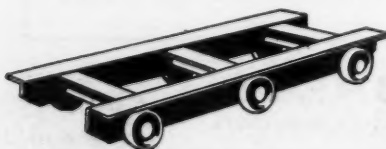
Ram Truck

being carried supported in front of the vertical uprights, and can either be of the telescoping or non-telescoping type, generally provided with a forward and backward tilt, and supplied in capacities of 3,000 lb. to 30,000 lb. The load is carried directly on the ram, which is generally of cylindrical construction, mounted on the elevating back plate, which is hoisted by means of direct chain lift or hydraulic and chain lift combination. The load being carried is counter-balanced by the weight of the truck.

Application—Ram trucks are most successfully used in handling cylindrical material with open centers such as tires, coils of wire wrapped or unwrapped, coils of steel, etc., and can be used in production operations, or in handling and storing in warehouses, storage yards and docks. With the elevating mechanism, the truck can be used for raising and lowering these different types of products into and out of storage, as well as for transportation. They are efficient for unloading cylindrical materials with open centers, from cars, trucks, barges, etc. They are most efficient for handling loads over distances of not more than 200 ft. If operations require longer travel, the ram trucks should be supplemented by tractor trailer trains, industrial cars, or some other means of transportation for the long haul, using the ram truck at each end of the haul for loading, unloading, stacking or feeding to production machinery.

Box Type Truck

Definition—A low frame type of hand truck with two or more axles, equipped



Box Type Truck

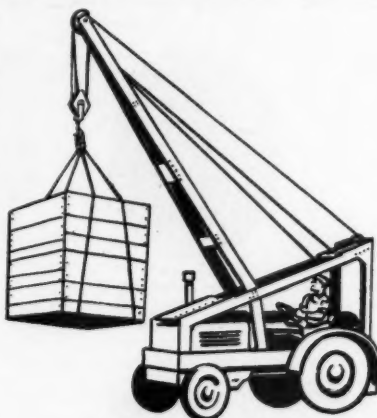
with wheels for moving heavy boxes and machinery.

Description—The box type truck is of low, strong and rugged construction with a hardwood or metal rectangular frame, generally with rigid axles and with four or six small wheels. The center wheels are so placed that the load may be balanced in turning. Frequently steel points are provided in the framework to prevent the load from slipping. By having the frame beveled or rounded at the end, heavy pieces can be loaded on to the truck with little effort.

Application—Different forms of construction make this type of truck applicable for many uses. The frame may be furnished with four wheels for moving case goods of moderate weight over irregular surfaces, as aboard ship, or within the warehouse. A form with a triangular frame is manufactured, and is used for handling barrels in an upright position, for carrying boxes or equipment through narrow aisles. It is sometimes furnished with double swivel casters in place of the wheels for the movement of pianos. It is a hand-operated piece of equipment and should be used only on short hauls, not to exceed 50 ft., although frequently when large cases are mounted on box trucks, they can be pushed by tractors or power trucks for greater distances. A box truck sometimes is misnamed a dolly.

Rigid Boom Industrial Crane

Definition—Rigid boom industrial cranes are those mounted on power-



Rigid Boom Industrial Crane

propelled chassis where the swinging of the boom is accomplished by the steering of the tractor or motor power units on which it is mounted.

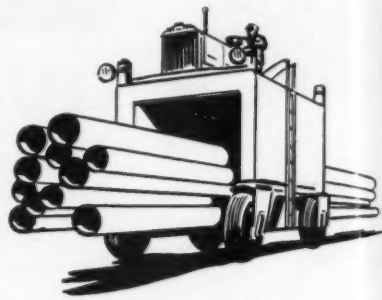
Description—This type of crane was first constructed on standard tractor units with the boom suspended in front of the tractor and the load carried over the steering wheels, sufficient counterweight being added at the back over the drive wheels to provide counter-balance for the load and traction for the drive wheels. Newer designs have been developed with the boom mounted over the traction or drive wheels, and the counterweight over the steering wheels. The booms can be topped to different angles, but not while the load is being carried. The swinging of the boom is accomplished by steering the supporting power unit.

Application—This particular type of

crane has been commonly called a "stevedore crane" because it was originally developed for use on piers for the handling of cargo and ships' gear. Since the crane is able to lift the load and transport it, it makes a very flexible unit, and is now used in industrial plants, ship yards, railroad and freight terminals, and other points on similar handling operations.

Straddle Truck

Definition—An automotive type truck with four wheel steer, constructed with



Straddle Truck

an inverted framework, motor and operator's position mounted on top of the framework, and the load straddled, lifted and carried, suspended on hoisting shoes supported by the framework.

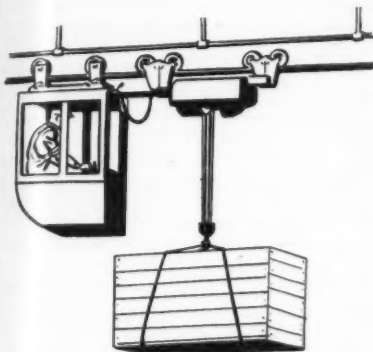
Description—The word "straddle truck" aptly describes this equipment, for the reason that the truck straddles the load that it is to carry. In building up the loads they are supported on bolsters or platforms, arranged so that the load hoisting shoes which are supported by the straddle framework can come under the bolsters or skids from the side, and hoist the load up for transportation. Since the truck has a four wheel steer, with the wheels fork columns mounted directly under each corner of the framework, it is possible to turn in a very small space. These units are made in capacities from 10,000 lb. to 30,000 lb., and with speeds geared from 30 m.p.h. for internal plant service, up to 50 m.p.h. for highway service. The units are mounted on pneumatic tires, are gasoline operated, and are built in various sizes insofar as load dimensions are concerned. The important dimensions generally to be considered are: width of load, height of load, and length of bolster. The length of the load is a matter of turning radius and balance.

Application—Straddle trucks were primarily designed for handling of lumber in large lumber yards, and at piers, terminals and storage areas. They have also been used extensively in shipyards for handling steel plate, and structural steel members. The same thing is true in connection with storage and on construction operations, where they have been used for handling girders, trusses, bridge members, beams, reinforcing rods, and similar supplies. In industrial plants they are used for handling pulp wood, containers of bulk materials such as chemicals, coal, rock, steel chips, refuse, and similar commodities. The advantage of the straddle truck is its ability to be self-loaded and self-unloaded, the operator being able to perform the entire operation without leaving his control position.

Monorail Telfer

Definition—This is an electrically operated hoist or hoists suspended from one or more trolleys, running on an overhead monorail track, and having a seat or cage for the accompanying operator. Automatic control is also possible, the operator manipulating the machines from a distance.

Description—The monorail telfer is a variation of an electric hoist, but differs in that it has its control operator riding on the rail, with the hoist unit, or is automatically controlled through a series of switches and other automatic mechanisms. Monorail telfers are generally designed to run on a steel rail, either suspended from or mounted on top of some form of superstructure, or suspended from the ceiling or roof trusses. Some monorail telfers are designed to travel on a cable instead of a rigid monorail. In operation, the control cage or cab is generally connected to the mono-



Monorail Telfer

rail hoist units, by means of a flexible connection, and the cab operator can control one or more hoist units, as the operation demands. The hook of the hoist unit can be equipped with various accessories such as grabs, magnets, buckets, and special operating devices for picking up various sizes and types of loads. Some monorail telfers have also been built where the cab is part of a hoist unit, and travels up and down with the hook, so the operator can easily connect to the load or step out of the cab for adjusting slings, etc. The speed of monorail telfers is dependent upon the horsepower of the motor used, gearing, etc., and varies from 350 ft. per minute to 1500 ft. per minute on straight track. The loads to be lifted depend upon the power of the hoisting units, and installations can be made with automatically controlled switches, interlocking transfer bridge cranes, etc. Power is generally picked up by means of some type of travelling collector wheels or shoes operating from power lines suspended from the monorail structure.

Application — Monorail telfers are used extensively in industrial plants on manufacturing handling operations and storage handling operations. Being able to travel on beams suspended from the ceiling, floor aisles are eliminated, and machine layout can use the additional floor space—at the same time be served by the monorail telfer for handling and transporting of the work to and from the machines. Extensive installations

(Continued on page 34)

A Barrel Truck that even a girl can use . . . alone



Globe Barrel Truck
No. 176-A, patent pending

THIS new Globe barrel truck is the fastest, surest, easiest, safest method of handling barrels, tierces and drums that you've ever seen! It's perfectly balanced to eliminate fatigue, and to speed work. Self-loading and unloading, the barrel can be placed on the truck *without* lifting the barrel. And, the operator doesn't even have to touch the barrel.

SELF-LOADING: The operator merely places the truck against the barrel, engages the chime hook and, placing his foot on the bar, pulls down on the handle. The barrel is automatically set onto the truck, with practically no effort, and without the operator having to touch the barrel. Unloading is just as easy.

EASY TO PUSH: The perfect balance of this barrel truck places the load directly on the wheels, so that a heavy barrel is moved with comparatively little effort.

BUILT TO LAST: One-piece welded construction. Large diameter roller bearing wheels with Alemite-Zerk type lubrication. Axle of 1½" cold rolled steel.

VERSATILE: The chime hook can be adjusted for various sizes of barrels or drums. When not in use the truck stands upright, takes little storage space.

It can be had with or without rubber tires when available, and with either a painted or hot dipped galvanized finish. Write for prices.

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MAKERS OF ALL TYPES OF INDUSTRIAL TRUCKS

Don't assume you can't get equipment—inquire.

D and W, July, 1943—31

Ropes and Slings Need Care

• Of all materials handling equipment ropes and slings are the most commonly misused and abused. Replacements today are virtually impossible.

NEW Manila rope of the sizes and lengths ordinarily used by riggers is now almost impossible to obtain for civilian use. It is, therefore, imperative that those who still own good rope take the best possible care of it and use it to the best advantage.

Long and sometimes sad experience in handling this equipment has driven home certain lessons concerning its proper use. Today, more than ever, it is a good rule to suspect every piece of gear—ropes, blocks, irons, planks, rails, etc., until it has been inspected just prior to use on a job. Every item on which safety depends should be carefully examined before every job.

Moreover, every rigger and handler should know how to tie at least half a dozen knots with his regular rope. Because of the manpower shortage today, particular stress should be given to this matter. The six fundamental knots considered by many experts as most essential are as follows:

The Blackwall Hitch (Fig. 1.) This simple hitch, used only on hooks and rings, consists of a loop with the end of the rope passed under the standing part and across the hook. Under strain, the hauling (standing) part jams the end against the hook. The hitch stays secure as long as the load on the line is constant.

Fisherman's Bend (Fig. 2.) A useful knot for fastening a rope to a ring, hook or rod. Many prefer it to the Blackwall hitch, because it locks itself either free or under load. It is made by taking two turns around the hook, then a half hitch around the standing part of the rope and between the hook and the turns, with a final half hitch around the standing part of the rope.

The Bowline Knot (Fig. 3.) To tie the bowline, lay the end of the rope over the standing part, forming a loop. Bring the end up through the loop, lead it around the standing part and then down through the loop again.

Half Hitch Double (Fig. 4.) This knot is used chiefly for making fast the end of a rope around its own standing part. It should never be used for hoisting timbers. To tie the double half hitch, make a round turn over the timber, then make two loops around the standing part of the rope.

The Square Knot (Fig. 5.) This is easily tied by taking the ends of the rope, passing the left end over and under the

right end, then the right end over and under the left. This makes a strong knot and one that holds more firmly the harder the rope is pulled.

The Clove Hitch (Fig. 6.) This is a simple method for fastening a rope around a pole, post or timber. It is also called the "Builder's hitch" because it is widely used in fastening staging to upright posts. To make the hitch, pass the end of the rope around the timber, then over itself, over and around the timber, then pass the end under itself and between the rope and the timber. The hitch locks securely as soon as the load is put on the line.

The matter of Manila rope slings also deserves special considerations today. The type of Manila rope sling generally used has a hook spliced at one end of a length of high-grade Manila rope, and a ring or hook at the other end.

According to the safety specifications

compiled by the National Safety Council, Inc., 20 N. Wacker Drive, Chicago, Manila rope slings should not be used under the following conditions:

1. For lifting molten metal or other loads where the rope will be subjected to unusually high temperatures. To do so may char the rope or do invisible damage which may cause the sling to fail under load.

2. If the load to be lifted has sharp corners, unless corner pads are placed between the load and the rope to prevent cutting the rope fibres.

3. To lift a load where there will be sharp bends of rope over an unyielding surface, as these bends cause extreme tension of the outside rope fibres, which may seriously injure the rope.

4. If the rope shows evidence of cuts, excessive wear, or other damage. Such a rope sling should be promptly discarded and destroyed, as its use will ultimately result in a serious injury to someone, or in damage to property.

5. If there is danger of getting acid or strong alkali on the rope, as such chemicals cause immediate damages to fibres, making the rope absolutely unsafe for further service.

If Manila rope slings are used, the following factors should be given careful consideration:

1. Before attempting to lift a load with a Manila rope sling, care must be taken to make sure that the sling is in proper condition and of sufficient strength to lift the load. This means that the hooks, rings and other fittings must be properly spliced to the sling legs. It also means that the weight of the load to be lifted must be carefully estimated, and the proper sized sling used. (See Table A.)

2. It should be remembered that a greater load can be safely lifted when all legs of the sling are in a vertical position. On the other hand, the smaller the angle formed between the legs of the sling and the horizontal, the greater the tension on the sling's legs and the less the weight which may be lifted safely. (See Table A.)

3. All users of Manila rope slings should be carefully instructed regarding the safe loads for slings under various conditions, and copies of Table A showing such loads should be posted in conspicuous places about the shop.

4. If three-leg slings are used, safe loads given in Table A for double (two-

TABLE A

Safe Loads in Pounds for New, Standard, Medium Lay, Three Strand, Manila Rope Slings, Spliced for Hook at One End and Hook or Ring at the Other End.

Approximate Diameter of Rope (Inches)	Safe Load for Single-Leg Vertical Sling	Double (Two-Leg) Sling Degree of Angle with Horizontal		
		60 degrees	45 degrees	30 degrees
3/16 (6 yards)	80	135	110	80
1/4 (6 yards)	105	180	150	105
5/16 (9 yards)	180	310	250	180
3/8 (12 yards)	240	415	340	240
7/16 (15 yards)	315	550	450	315
1/2 (21 yards)	475	820	670	475
5/8	620	1075	875	620
11/16	790	1370	1115	790
3/4	970	1575	1375	970
13/16	1170	2025	1650	1170
1 1/16	1395	2400	1950	1395
1 1/8	1620	2800	2290	1620
1 1/16	1890	3275	2675	1890
1 3/16	2160	3740	3050	2160
1 1/4	2430	4200	3435	2430
1 5/16	2700	4675	3820	2700
1 1/2	3330	5795	4700	3330
1 3/4	4050	7000	5725	4050
1 7/8	4770	8200	6750	4770
2	5580	9655	7900	5580
2 1/4	7390	12775	10435	7390
2 3/8	9290	16200	13235	9290
3	11520	19950	16300	11520
3 1/4	13860	24000	19600	13860
3 3/8	16390	28375	23150	16390
4	18900	32725	26725	18900

(leg) slings may be increased 50 per cent, and four-leg slings 100 per cent; i.e., the safe load for a new one-inch three-leg sling at 60 deg. with the horizontal is 4200 lb., and for a new four-leg sling of same size and angle, 5600 lb.

5. When a rope sling has been in use for six months or longer, even though it shows no sign of wear or other damage, the loads placed upon it should be limited to one-half those given in Table A.

Manila rope slings deteriorate very quickly if they become wet and are not properly dried out. Whenever they have become wet or dirty, they should be cleaned and hung up, so that they may become thoroughly dry. They should not be thrown into a corner or covered with material so that the air cannot circulate through them.

Slings should not be stored in a damp place as rot may result. On the other hand, if stored in too dry or too warm a location, the rope fibres will become brittle and lose much of their strength.

Rope slings should not be allowed to freeze after becoming wet, as frozen rope breaks easily. Frozen rope slings should not be piled against radiators, steam pipes, or other sources of heat, as this will tend to dry out the oil in the rope and destroy the life of the rope fibres.

Safe loads given in Table A are based on a factor of safety of five. The minimum breaking strengths used in the computation of the Table have been taken from the United States Federal Specifications for Rope, Manila T-R 601, promulgated on March 7, 1933, by the Federal Specifications Board, United States Bureau of Standards, Washington, D. C. The maximum strength of the splices necessary for hook at one end of the sling and a hook or ring at the other end has been taken as 90 per cent of the minimum breaking strengths of the ropes.

To help industrial and civilian users of the smaller sizes of manila rope who

may have no usable rope remaining, or who are using rope which is unsafe because of wear, The Chain Institute, Inc., 208 South La Salle St., Chicago, has just completed a study of the proper substitution of weldless chain for manila rope.

The Army, Navy and Maritime Commission's urgent need for manila rope was brought into sharp focus recently by an appeal from the War Production Board for all manila rope that can be spared "if it is 3/16 in. or more in diameter and 200 ft. or more in length." The Government offered to pay 10 per cent above the owner's net cost, exclusive of freight charges.

Needless to say, that appeal was not made until the Government had first bought up visible inventories. But still more was and is needed, and until the Philippine Islands are recovered, there is every likelihood that demand will continue to exceed supply, as the base material, abaca fibre, comes chiefly from the Islands. On the other hand, iron ore, the base material of steel, comes from within the Continental United States. Fortunately for civilian users of smaller size ropes, from 3/16 in. to 1/2 in. diameter, hope for relief is now offered by the manufacturers of weldless chains.

The study made by The Chain Institute revealed that although capacity for the manufacture of welded chain is being taxed to the utmost to fill essential war demands, there does exist idle capacity for making weldless chain. This capacity, which under normal conditions meet civilian chain needs, has been partially idle for more than a year because steel was not available for weldless chain production.

The Institute then studied the breaking tests of weldless chains in comparison with manila rope, and prepared a table which brackets 10 ropes under 1 in. in diameter with the weldless chain that provides comparable strength for each.

For example: the smallest rope listed is 3/16 in. Manila rope in this size made to Federal Specification TR-601a



Fig. 1



Fig. 2



Fig. 3

Photos courtesy Dutch Boy Painter



Fig. 4



Fig. 5



Fig. 6

... These are the six fundamental knots considered by experts as most essential for riggers and handlers. Because of the man-power shortage today more careful instruction and supervision are necessary for efficiency and safety.

has a breaking test of 420 lb. and wartime substitute fibre rope a breaking test of 336 lb. The comparable weldless chains are Tenso Type (No. 3) with breaking test of 375 lb., Lock-Link Type (No. 4) with a test of 405 lb., and Niagara Type (No. 4) with a test of 420 lb.

Similar convenient comparisons have been worked out for rope sizes $\frac{1}{4}$, $\frac{5}{16}$,

$\frac{3}{8}$, $\frac{7}{16}$, $\frac{15}{32}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$ and $\frac{3}{4}$ in. Copies of the chart are now available from chain manufacturers and hardware wholesalers.

The Institute also reports that fittings and attachments already developed and available for service with weldless chain make possible its adaptation to many uses previously handled by manila rope.

According to The Chain Institute, tremendous war-use demand for welded chain prevents additional manufacture of this type of chain to replace the larger sizes of manila rope. Welded chain is vital for a thousand and one uses by the Army, Navy and Maritime Commission, as well as in industry generally, and there is no idle manufacturing capacity.

HANDLING EQUIPMENT MANUAL

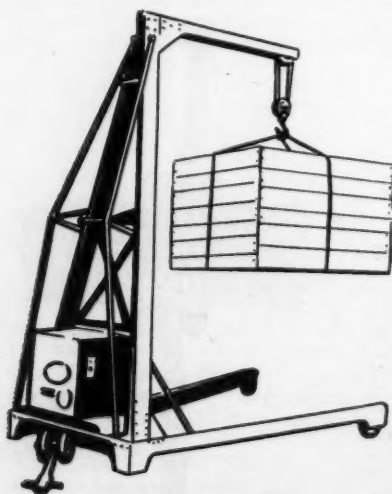
(Continued from page 31)

have been made in coal storage plants, in piers and warehouse work, for distributing materials into the warehouse; also in steel mills for handling raw and finished products, and in the paper industry for many similar handling operations. By the use of buckets, suspended from the hoist hook, loose or bulk materials can be handled, and by grab slings, and magnets, packaged, bar stock, and sheet steel can also be handled. Various types of monorail telfers can be applied under difficult physical conditions, as it is frequently possible to install the overhead track on which the monorail telfer operates, in many otherwise inaccessible places—as over ravines, rivers or rough country, and over areaways between buildings. Monorail telfers can operate on various floors, providing the freight elevator or other hoisting mechanisms are equipped with a monorail track for raising and lowering the telfer unit and its load from one level to another. Interlocking devices on the ends of the tracks make for safety of operation.

Portable Jib Crane

Definition—A crane which may be easily moved from one location to another, generally mounted on wheels, and with legs that come into contact with the floor when the crane is used for lifting. This crane, however, is not designed for moving or transporting the load.

Description—Portable jib cranes are constructed in many different designs,



Portable Jib Crane

but they are generally designed with an open base, so that the base can straddle the load from one side in order to permit the crane hook to get directly over the load to be lifted. While the illustration shows a straight jib, they are also constructed with gooseneck or curved jibs. This type of crane is generally of light capacity, and operated through a hand powered winch.

Application—This type of equipment is generally used on slow movements, and on operations which are performed at infrequent intervals, or where it is necessary to suspend the load for a period of time, such as working on a casting, the lifting of a motor on to a machine, the handling of dies to benches, and similar production operations, although large units of this type have also been built and used in aircraft hangars, for the lifting of motors on to and off of the fuselage, from assembly bench to test stands, etc. As stated in the description, this is purely a portable lifting unit, and is not designed for transporting the load any distance, although if properly designed, can safely move short distances, say up to soft, with the load suspended from the hook.

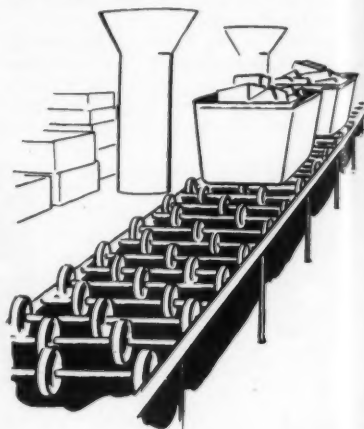
Wheel Conveyor

Definition—A type of package-carrying conveyor which supports the load to be conveyed on small wheels, turning in fixed bearings, and spaced at distances apart, depending upon the size of the units carried.

Description—Wheel conveyors can be had in several different types of construction, and both in straight and curved sections, with and without supports. Straight sections are generally 5 ft. or 10 ft. in length and are of various widths, the average width being about 12 in. Some makes are constructed with several wheels on through axles while others are constructed with wheels fastened to longitudinal runners. The wheels are generally of the free rolling ball bearing type.

Application—The wheel conveyor has its best application in the handling of packaged materials, particularly in the loading and unloading of barges, trucks, railroad cars, etc., where individual packages are being handled in a fairly continuous stream. The conveyors are designed to handle many different types of merchandise in wooden and cardboard cartons with flat or semi-flat surfaces, as well as many different products in finished or semi-finished condition during manufacture. Care should be taken to see that the wheels are properly spaced to provide ample support for the prod-

ucts being handled so they do not have a tendency to fall down between the wheel centers. To obtain the best operation, the conveyors should be set up with an average pitch of $1\frac{1}{2}$ in. to 3 in. per 10 ft. section, if gravity flow is de-



Wheel Conveyor

sired. It can operate on the level but will require manual pushing of the packages, if the conveyor is of any length. This conveyor can be used in simple systems of one or two straight lengths, or systems consisting of a number of straight lengths, curves, deflectors, and in conjunction with various types of belt and apron boosters.

Tiering Machine

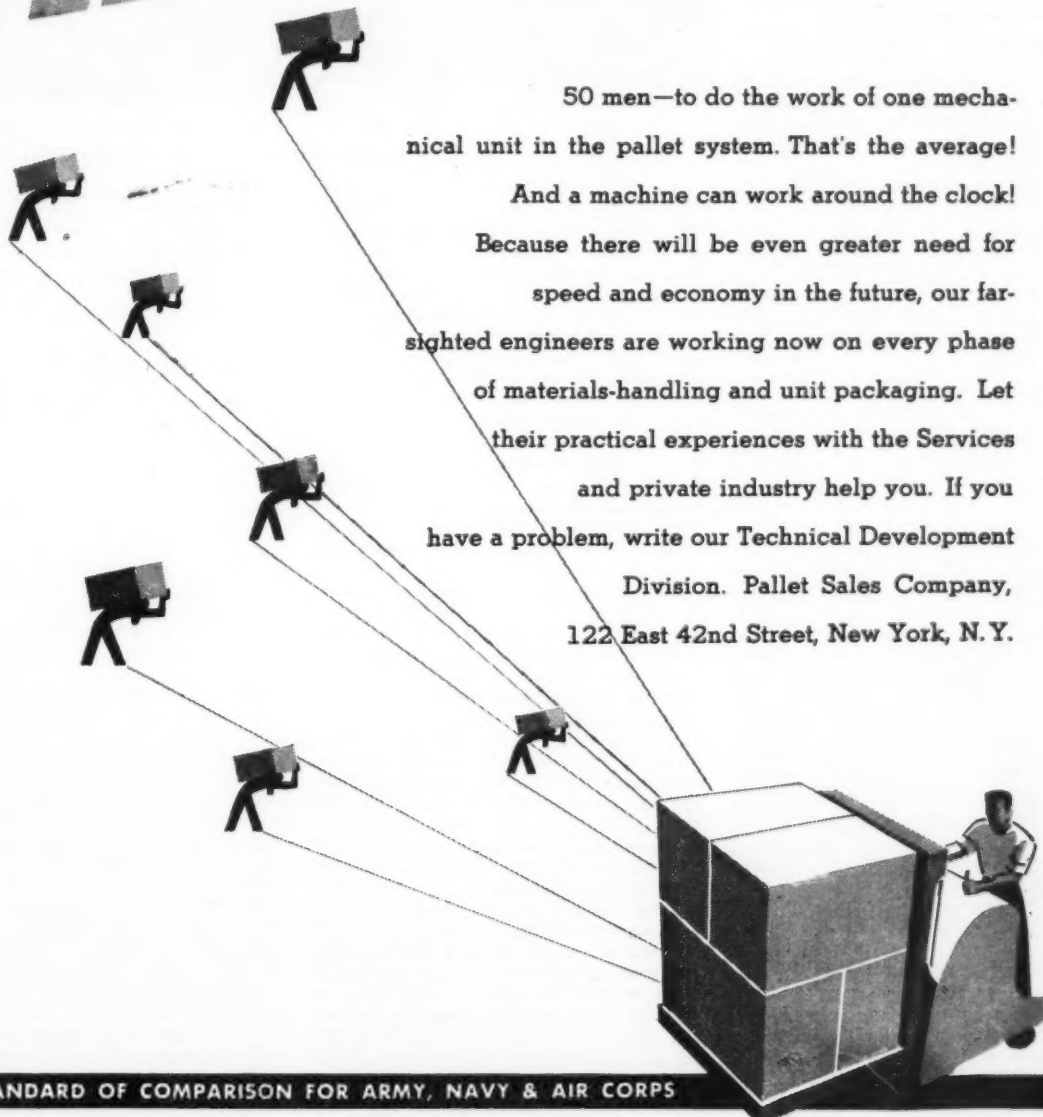
Definition—A hand or power-operated vertical stacker or elevator with vertical uprights either non-telescoping or telescoping, and with elevating platform.

Description—Tiering machines have been made of the simple platform type, where the platform elevates in front of the uprights, which are supported by a base frame. They have also been built with revolving turntables in the base. Others have been developed equipped with a double pair of uprights, the platform riding between the sets of uprights, the same as a freight elevator. The uprights are sometimes hinged to permit passage through low doors and under balconies. The later types are of the telescope construction to avoid the necessity of partially disassembling the machine under such operating conditions. The platform is elevated by some suitable mechanism, by hand or by gas or electric power. The tiering machines are equipped with wheels and are provided also with legs or jack screws which come in contact with the floor when the machine is in operation so as to avoid

(Continued on page 80)

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D and W, July, 1943—35

Airports and Air Cargo

By JOHN H. FREDERICK
Air Cargo Editor

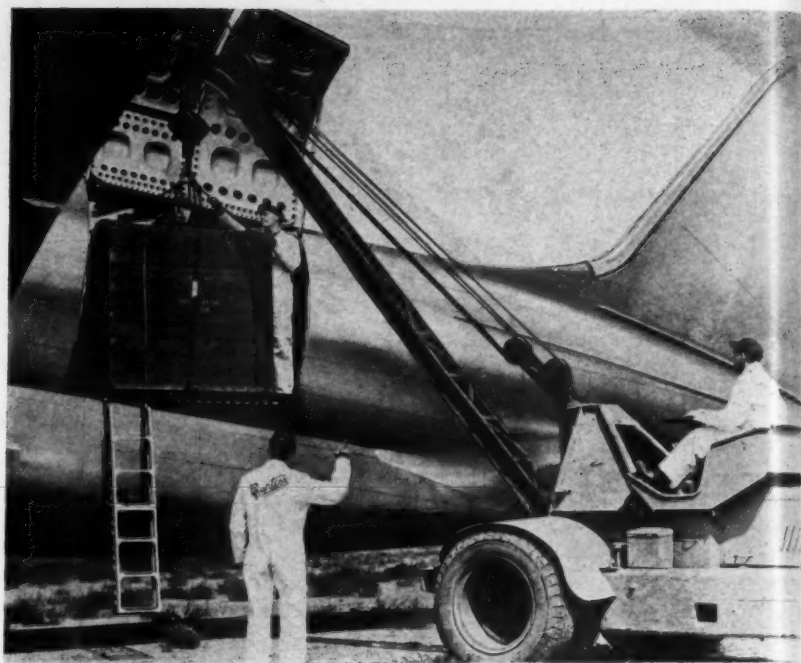
THE problem of an adequate air cargo service for national distribution, particularly to small communities, lies only in part in the technical development of suitable aircraft and airline operating procedures. The establishment of air cargo routes, and all other air routes, is equally dependent upon the adequacy of airport facilities at the communities intended to be served.

The lack of suitable airports has been one of the primary retarding factors in the expansion of air transport services to more communities in the United States. Even if suitable equipment had been available and even if a rational rate structure had been determined, few new scheduled airline stops could have been added to the airline systems operating before the war because of the poor quality of existing airports.

Since 1941, however, the airport situation has been materially improved because of government activity in connection with the war. The possibility of an economically sound air cargo service would be greatly increased by the development of a national airport system designed to meet the requirements for air cargo as well as air mail and passenger services.

In planning an airport system, airports may be placed either with respect to the distribution of population and business activity or with reference to a somewhat uniform geographical distribution. In connection with the former, the Civil Aeronautics Board, in 1938, estimated that a total of about 3,000 airports would be needed to provide one within 30 minutes driving distance of every reasonably compact population group of as many as 5,000 persons and within one hour's driving time of all sections having a mean population density of as much as four persons per square mile. With reference to a uniform geographical distribution, airports could be so located that every point in the United States would be within 15 miles of an airport, if slightly more than 5,000 fields were maintained.

When this estimate is compared with the status of airport facilities on Jan. 1,



Courtesy Curtiss-Wright Corp.

... The portable crane can be moved about the airport for use in handling the heavier loads.

1942, as shown in Table 1, the latest figures so far made public, it may be seen that airport development in this country was considerably under the minimum proposed by either of the suggested bases. The numerical inadequacy of these airport facilities is further complicated by the fact that many of them are too small for commercial use and lack service facilities for handling air transport traffic, either passenger or cargo.

The airport summary as given in Table 1 indicates that at the beginning of 1942 only 9 per cent of the total commercial, municipal and intermediate airports were authorized to be used by scheduled air carriers. Both the number of existing airports and the number designated as scheduled airline stops appear to be relatively evenly distributed between the several geographic divisions. The important fact to note is the very small percentage of utilization of these airports for scheduled airline service. This situation, as mentioned earlier, is explained by the fact that a great majority of the fields were beneath the minimum requirements for commercial use.

Probably the main reason why airports in the past have not come up to the minimum standards required for commercial air transportation is that most of them have never paid their way or shown an operating profit. Of approximately 650 municipal airports in the United States investigated in 1940, not more than 15 per cent were paying their way or breaking even. The remainder had operating deficits, requiring appropriations out of general municipal tax funds to balance their budgets. It may be said that this situation has not improved much in the past three

years. Local governments are reluctant to spend money for the support and maintenance of airports unless they can receive the benefits of scheduled airline service with consequent fees for landing, hanger and storage and office space rentals.

The burden of airport maintenance falls especially hard on smaller cities and on cities of limited resources. Unlike most public improvements which may be proportional in size and expense to the size of the city, the landing area of an airport of a city of 100,000 population must be the same size as the landing area at an airport serving 1,000,000 population to accommodate the same size planes. Other improvements such as the quality of the runways, the standard of the lighting equipment must be the same on an airport owned by a small city as on an airport owned by a large city.

Commercial air transportation is now at the point where its continued development can be seriously handicapped by lack of airport planning. Much of the airport construction of the past few years has been with military or strategic ends in mind, rather than commercial. There has been altogether too little planning of airports from the standpoint of future use.

W. W. Davies, research engineer, United Air Lines, recently set up the following specifications for large, medium and feeder airline terminals:

LARGE TERMINALS—These require runways 8,000 to 10,000 ft. long with many parallel runways to allow for multiple airplane movements. Movement of aircraft in and out of large terminals is estimated as: total movements, 750;

Dr. Frederick Points Out:

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of airports from the standpoint of future use. We have no air cargo terminals today except those used by the army and navy.

Man handling of air cargo must be eliminated. Good materials handling equipment is available and new and better facilities will naturally come as air cargo develops. With proper ship design, pallet mounted packages or skid platforms, with strapped loads, could be bolted to the cargo floor and would require no further lashing.

Until proper airports and ground handling facilities are provided, the development of air cargo will be hampered. This is a problem that demands the interest of business men and local government officials as well as the airlines. The present air carriers are more than anxious to make their services available to the public wherever and whenever they are needed, but they cannot do so without the cooperation of the shipping public.

maximum hour period, 75; maximum six-hour period, 300; complete instrument landing and control facilities will be available.

MEDIUM TERMINALS—These terminals also require complete instrument landing equipment and many parallel runways, though not as great as the large terminal. Runway lengths required are between 6,000 to 8,000 ft. Airplane movements will probably be: total movements, 400; maximum hour period, 50; maximum six-hour period, 200.

FEEDER TERMINALS—Runways must be 5,000 to 6,000 ft. in length. Airport will be similar to present average-sized terminal. Instrument landing and control required. Airplane movements estimated as: total movements, 125; maximum hour period, 10; maximum six-hour period, 35. Strip type runways, that is, one major runway, will probably be in considerable use in the future on at least feeder terminals. These will be 8,000 to 10,000 ft. long with terminal located in the center.

Even the airports built most recently have been constructed with the idea of serving passengers and are without adequate terminal facilities for handling present or future air cargo. In fact, we have no air cargo terminals today except those used by the Army and Navy. The development of air cargo traffic, however, will bring about a specialization of airports which will require a diversity of airport development to meet the needs of each locality. Large cities will require separate airports for serving passengers and for handling air cargo. A single airport may suffice for all types of traffic in communities of small size, depending upon the nature of its business activities, but this will not be the case for larger centers of population.

There are many ideas as to what an air cargo terminal or airport should look like and the facilities to be provided for cargo handling. One of the best statements on this subject was made by Karl O. Larson, chief engineer, Northwest Airlines, at the Air Cargo Engineering Meeting in Chicago last December. Larson envisages a long warehouse with aircraft parked on one or both sides. Such a warehouse being one of a group of fingers originating from a connecting header which could either serve as an enclosed path of communication between the fingers or as a central warehouse where cargo would be cleared to or from surface carriers, where transfer air cargo is handled from one line to another, or where cargo is stored temporarily.

Larson suggests that an alternative to this plan might be a large central warehouse for the receiving, shipping, clearance, storage, transfer, and administration of cargo with delivery to and from the cargo planes spotted alongside extended loading docks, underground ramps or lifts, or parked anywhere in the vicinity of the warehouse. Should this latter plan be used the warehouse need not be directly on the airport but could be across a road or connected with an overcrowded airport by an underground passage. Undoubtedly available airport space, funds for building construction and operating costs will probably be a greater factor in the early days of cargo terminal construction than will the small variations in handling efficiencies.

Larson suggests the following 35 minimum requirements for an air cargo terminal building no matter what type is used:

1. Convenience to airport runway lay-

out. 2. Railroad connection—preferably to transfer yard. 3. Good highway connections. 4. Rail loading docks. 5. Truck loading docks. 6. Receiving room with facilities for weighing and inspection of cargo. 7. Receiving room for mail. 8. Mail handling and rework space and facilities. 9. Dead storage area. 10. Assembly area for plane loads. 11. Storage area for plane loads. 12. Conveyor system for rapid movement of light cargo and mail. 13. Trucking aisles for rapid movement of cargo trains, lift trucks, etc. 14. Pneumatic tube system for rapid dispersal of cargo information. 15. Administration headquarters. 16. Load dispatch headquarters. 17. Airline headquarters. 18. Cold storage area. 19. Storage vault. 20. Inflammable storage. 21. Communication system. 22. Equipment maintenance facilities. 23. Crating and packaging facilities. 24. Aircraft servicing facilities. 25. Aircraft handling equipment. 26. Aircraft loading equipment. 27. Radio communications to aircraft and control tower. 28. Aircraft air conditioning equipment. 29. Aircraft ramp and taxi area. 30. Locker room facilities. 31. Aircraft crew lounge. 32. Fire protection. 33. Garages for mobile equipment. 34. Spectator area. 35. Terminal heating plant.

The actual handling of cargo within the terminal need vary from present good practices of materials handling only far enough to meet the peculiar aircraft loading and unloading characteristics. Certainly man handling of air cargo must be avoided. Much good materials handling equipment is available now and new and better facilities will naturally come as air cargo develops.

As Larson pointed out in considering the aircraft docked alongside the warehouse where cargo would have to be moved a distance approximately half the span of the wing or about 100 ft.:

"With a substantial building serving



Courtesy Curtiss-Wright Corp.

... Lift and lug—the too common method of loading cargo planes today. This will have to be eliminated in the future, when air cargo becomes general, as it is too slow and too expensive.

as an anchor, it is feasible to lower or swing into place between the cargo door and the warehouse door a powered conveyor belt or track capable of moving the heavy and the light loads either way with man supervision only. At this distance the variation in door height of planes ceases to be a factor because of the very small positive or negative slope that will result with the terminal end of the conveyor at standard loading platform height. Using a similar non-powered roller conveyor, cargo could be moved with a minimum of effort to and from the aircraft by raising or lowering the terminal end of the conveyor to produce slight negative slope in the direction of the movement of the load. Should it be difficult or impractical to swing or lower a powered conveyor into place as may be the case where the load has been accumulated on a loading dock removed from the warehouse same can be rolled into place and elevated to required heights.

"As long as cargo has to be brought to the aircraft instead of the aircraft going to the cargo, a powered, covered conveyor operating from warehouse to ship has probably more distinct advantages than any other apparent system of handling cargo—whether or not it will come into use will depend largely on our ability to handle the conveyor."

When the cargo must be moved to the plane from the warehouse, problems of handling increase. Larson lists these problems, applying not only to present type aircraft but generally to any aircraft as:

1. Ramp ice and snow. 2. Multiple handling. 3. Maintenance of control. 4. Maintenance of communications. 5. Protection of cargo from snow and rain. 6. Protection of cargo from freezing. 7. Protection of cargo from hot sun. 8. Protection of valuable cargo. 9. Hoisting and lowering.

Larson also points out that:

"Multiple handling of cargo is gen-

erally necessary when the aircraft is beyond the reach of a conveyor directly from the warehouse. An exception to this is probably the mobile elevating platform which can be loaded at the warehouse, moved to the plane either by its own power or by an auxiliary truck unit, elevated to the height of the cargo door and unloaded directly into the plane. If the bed of this platform incorporates rollers for easy movement of the cargo it then becomes merely an independent movable section of the conveyor system.

"The cargo train is a good competitor of the conveyor system on most any problem of load handling. It is handicapped out of doors in bad weather and it does require multiple handling at the aircraft, but it is flexible and flexibility of handling operations around the variety of aircraft that are now capable of hauling cargo is a feature of prime importance. The flexibility of this system of gathering and delivering loads presents enough interesting advantages to warrant review.

"Units of a cargo train can be dispersed around a warehouse and can be loaded as the cargo accumulates. They make simultaneous loading of mail, express, incoming freight, hold-over-freight and transfer cargo possible.

"Loading directly to units of the train eliminates multiple handling in the warehouse. Shippers can deliver their goods already loaded on a train unit.

"Units of trains can be assembled at any time ahead of schedule or they can be picked up at their individual loading positions just prior to delivery to the ramp.

"Units holding valuables can be locked in a vault until loading time. Those holding perishables can be placed in a refrigerated room.

"Trains of any size can be assembled to carry the entire load for a large foreign bound freighter or a small local pickup helicopter with a minimum of

handling equipment and man power for either.

"Transfer cargo can be loaded to and from the cargo train with no intermediate handling even though any particular carrier's load may transfer to a large number of other carriers.

"Best favored of the cargo train equipment is the low, rubber tired cart so rigged for steering that it will trail accurately. It is capable of high speed operation, is easily coupled and decoupled, and is fitted with brakes. At terminals where hundreds of such carts would be required, where a large amount of loaded freight is standing idle, and where shippers will cooperate by loading directly, a simple independent skid platform picked up and moved by a matching hand lift truck designed with wheels, couplings, and steering similar to that of the cargo train cart is available. This combination equipment effectively cuts down the investment in handling equipment, permits closer stacking in the warehouse, and allows a system of efficient loading in and out of the aircraft."

When the cargo train system is used, a means for hoisting and lowering cargo between the plane and the bed of the trucks in the train must be developed. Larson holds that, probably the best and maybe the only hoisting device that can do an all-around job is the fork lift truck. Unless the ramp can be kept clean at all times the common small, factory lift truck with small smooth wheels and low clearances cannot be used. Models with larger treaded wheels are available and have been doing good work in factories, warehouses and yards for years, and with a little further development can do the job required. Improvements must and can be made in maximum overall height to permit maneuvering under plane wings, visibility for the operator, lifting and lowering speeds, steering effort, and convenience of controls.

The fork lift truck can pick up any packaged piece of cargo that is pallet mounted, any loaded skid platform or any cargo train cart and elevate it to cargo door level and hold it for unloading into the aircraft or place it inside of the aircraft for further handling by the cargo stowing crew. Hand lift trucks inside the aircraft can pick up and move the pallet mounted load or the skid platform into position. If the aircraft is large enough the cargo train cart can be moved inside of the cargo hold to the point of unloading for stowing.

With proper ship design the pallet mounted package or the skid platform with the load already strapped to it can be bolted to the cargo floor and would require no further lashing. The reverse of all of these operations apply equally favorably when unloading.

Shippers will use air cargo only if it is more advantageous to them than the services of competing ground carriers. The important advantages of air transport service are speed and frequency of schedules. Without airports of proper

(Continued on page 73)

TABLE I

The Location by Geographic Division of Commercial, Municipal, and Intermediate Airports and Their Utilization by Scheduled Domestic Air Carriers as of Jan. 1, 1942*

Geographic Division	Total airports ¹	Per cent of total airports	Number of airports serving scheduled airline stops	Per cent of total airports serving scheduled airline stops	Per cent of airports utilized
New England.....	97	4.22	17	8.06	13.40
Middle Atlantic.....	238	10.35	16	7.58	6.72
East North Central.....	406	17.66	24	11.37	5.91
West North Central.....	266	11.57	28	13.27	10.53
South Atlantic.....	322	14.01	31	14.69	9.63
East South Central.....	102	4.44	21	9.95	20.59
West South Central.....	304	13.22	22	10.46	7.24
Mountain.....	313	13.61	32	15.16	10.22
Pacific.....	252	10.96	20	9.48	7.94
TOTALS.....	2,299	100.00	211	100.00	9.18

¹ Army, Navy, miscellaneous Government and private airports, number 185, omitted.

* Source: Civil Aeronautics Authority, *Civil Aeronautics Journal*, Jan. 5, 1942.



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Improved Methods Speed Storing of Materials

By JOHN L. LARE

Fort Wayne Works
General Electric Co.

BUNDLED sheet steel, plate stock, and various palletted materials are now handled and stored more easily than formerly at the Fort Wayne Works of the General Electric Company. This is especially so in cases involving the handling and storing of this material in congested and low-ceilinged areas, in space previously inaccessible, and on upper story floors too light to support the additional weight of heavy mobile equipment.

In one case, the existing storage and handling facilities for lamination sheet steel in one department were overburdened. The only available space that could possibly accommodate the floor load was the basement area.

This steel is received for storage in packages consisting of three or four 5,000-lb. lifts separated by lengthwise dunnage strips. Before being stored the banding is removed and subsequently the steel is handled in 5,000-lb. units. The steel varies from 26 in. to 32 in. in width and up to 122 in. in length, and its gage is too light to permit safe movement by forks in an unbound bundle.

Previously, overhead cranes handled this stock. Now a power-operated sheet steel grapple mounted on an inverted

fork arrangement on a conventional battery-powered truck is used for the entire operation of handling and storing this steel.

This method makes possible the storing of approximately one-third more

stock in the available area than could have been done with overhead cranes. Also, the grapple is easily attached and removed, and standard forks substituted on the truck. The resulting flexibility permits an almost unlimited application for handling this stock in any area in the plant.

In another case, the amount of steel plate stock previously handled by overhead cranes and battery-powered fork trucks in the plant's motor-generator department was found to be unsatisfactory. This stock is used in the fabrication of bases and frames, and the department's greatly increased production rendered this method of handling inadequate.

A large, pneumatic-tired, gas-powered fork truck was purchased to handle the stock (Fig. 2). This truck has a 98-in. lift and is rated at 10,000 lb. on hoist, or 205,000-in. lb.

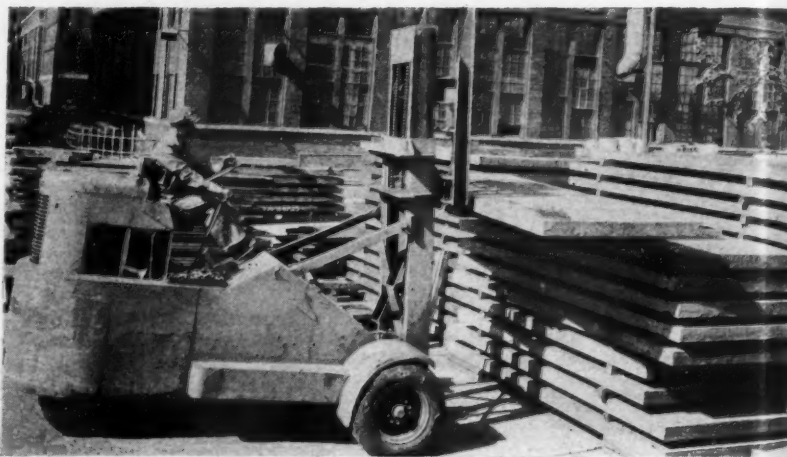


Fig. 2.—Fork truck handling plate stock in an area formerly inaccessible for this purpose.



Fig. 1.—Sheet steel grapple fork truck stacking lamination steel in low head room area.

As a result, one operator now safely handles plates as large as 12 ft. long and 6 ft. wide, and narrow sizes up to five tons. The truck is faster and safer than the conventional battery-powered truck in negotiating the necessary distances and grades especially on ice and snow. Also, because of its versatility, this truck facilitates the full use for storage purposes of areas formerly inaccessible for this purpose.

In a third case, much material at this plant must be handled on upper story floors that are too light to support, and in some cases too congested to accommodate, the conventional heavy fork trucks. Consequently, some of this material had to be moved by hand pallet trucks and the remainder by whatever method proved most effective, however difficult and laborious.

This condition was remedied by the introduction of a battery-powered pallet truck. This little truck has a maximum capacity of 4,000 lb. and is equipped with a manually operated 3½-in. hydraulic lift.

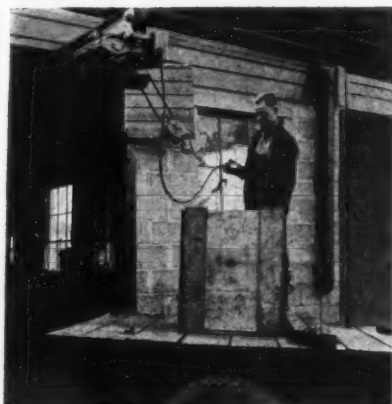
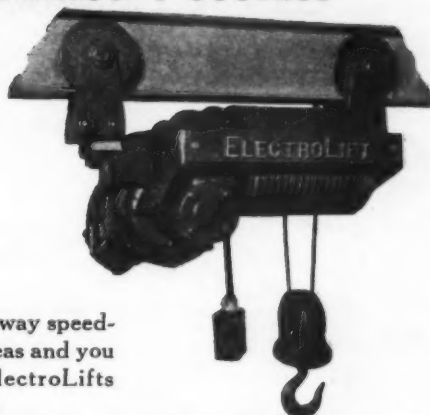
With the use of this truck, not only

(Continued on page 60)

FAST, EASY Handling of Materials Helps Make Production Miracles Possible

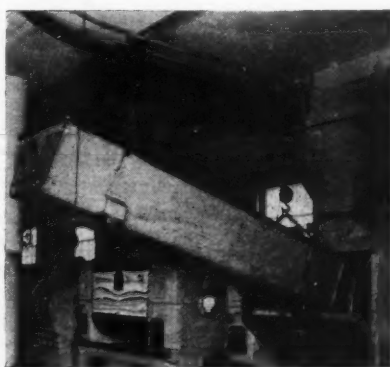
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Picture an express highway speeding traffic over congested areas and you have the idea of how ElectroLifts streamline plant production.

Built to operate with unusually close headroom, ElectroLifts take up no valuable space themselves . . . provide all of these advantages:

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SAVE SPACE — no floor space need be kept open for the flow of materials, equipment can be packed in closer, no depots at machines must be maintained.

RELEASE MAN-POWER — one unskilled man can operate an ElectroLift and move tons of materials quickly, safely and easily. Skilled man-power is thus kept busy on actual production.

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Exclusive Worm Drive Mechanism . . . makes ElectroLifts quieter in operation, longer lasting, more compact and efficient.

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Motor Freight Breakdown Looms, Nation-Wide Survey Reveals

*Immediate Production of New Equipment and Repair Parts
Called Vital to Prevent Transportation Crisis, Ship-
pers, Carriers and Warehousemen Declare*

SHIPPERS, motor carriers and warehousemen in all sections of the country, in reply to D and W's recent inquiry as to the likelihood of a transportation breakdown, by an overwhelming majority are of the opinion that a serious crisis is imminent in highway transportation of freight, and that unless new equipment is made available and more repair parts produced soon large numbers of motor carriers will be unable to continue operations.

The replies received are impressive on three counts. First because of the number and character of the shippers represented whose interest and concern are manifest in the length and detailed nature of their replies. Secondly, because of the unanimity of opinion expressed by the majority in each of the three groups with respect to the seriousness of the situation and the imperative need of immediate action. Thirdly, because of the variety and vital interest of the

related subjects and problems cited not by traffic managers only, but also by warehousemen and motor carrier operators.

It will be physically impossible, of course, for us to publish all of the letters we have received. In order to give readers as comprehensive and concise a report of the survey as possible we have tabulated the replies as will be seen on the following pages.

In addition, we publish below extracts from many of the letters received. Because of space limitations, and because the largest number of replies were from shippers, we have confined all of the extracts published in this issue to shippers' letters.

The importance of the subject, the interest shown and the constructive value of many of the letters induce us to believe that the publication of additional extracts next month is both warranted and desirable.

If there is such need for gasoline rationing why is it limited to the 13 states in the eastern area? I am not finding fault with the powers who exercised the judgment in setting up the program. What I am after is the underlying reason for causing the greatest hardship on a limited area of the country. If the situation is tough why not make it proportionately tough for everyone.—
Maurice Rabin, Glenshaw Glass Co.

While there is a serious situation with respect to replacing parts, much more serious is the feeling and attitude of motor truck operators. This is brought about by the fact that their facilities are limited and increasing attention is devoted to handling truck load business. This trend has been accelerated in recent months by three factors:

1. The tendency on the part of the Government to commandeer equipment of motor carriers.
2. Business offered by Government of truck load nature.
3. Shortage of man power and terminals and men to operate equipment.

Truckmen do not see why they should congest their terminals because of inability to obtain help to segregate merchandise of a less carload nature. They also do not see why they should incur expense to handle type of traffic which can be avoided to the preference of more attractive traffic of a truck load nature.

This situation can be relieved in three ways. First, by making available to motor truck carriers more equipment; secondly, to order an expansion in terminal facilities; thirdly, by issuing instruc-

tions to local draft boards to comply with War Manpower Commission Bulletin No. 21 which has certified transportation service as essential to the war effort. Local draft boards to make up their quota sim-

New Equipment

What we have to say applies with equal force to both common and private motor carriage:

1. There has been insufficient emphasis by the War Manpower Commission on the essentiality of retaining motor carrier personnel on the job. Neither maintenance nor driving a tractor-trailer are jobs that satisfactorily can be turned over to children or old men. The urgency of this situation is something that must be faced squarely by the government and that very soon.

2. The matter of spare parts and replacement vehicles is too tight. It is appreciated that there are many demands on the critical materials that are involved, but there could be hardly anything more important than proper maintenance of existing motor carrier equipment, at least sufficient to keep them rolling in service and with a minimum of delay. As for new equipment, I doubt if the same quantity of material could be expended for any transportation facility where it would pay as big a dividend in tons of freight carried for any unit of time.—P. H. Johansen, Cannon Mills Co.

ply do not follow instructions received from the Manpower Commission—C. Pascarella, Gen. T.M., Francis H. Leggett & Co.

Before gas rationing better than 80 per cent of our product was hauled by truck. Now we are sending about 50 per cent by rail.—Jno. L. Martin, Western Silo Co.

We have so far had no difficulty in securing necessary repair parts for our own trucks and trailers, and their operation has not been restricted for that reason at any time. This may be partly due to the fact that this equipment is being used only in emergencies for deliveries, which means that the mileage they travel is not nearly as great as normally would be the case.—D. G. Strother, Asst. Sec., Galion Metallic Vault Co.

Our feeling is, that our Government in its anxiety to sustain the rubber supply, have imposed burdens upon commerce that amount to real punishment. The local and other commerce generally is carried on by the use of trucks, instead of former methods prior to the changing to truck service. Mr. Eastman is a very able member of the interstate commerce commission, and doubtless is familiar with railway and steamship traffic, but is unfamiliar with local business. There are probably no men engaged in the Department who have ever practically handled truck or other commerce. Certainly there must be business

brains enough, if used, to do that which is necessary without inflicting punishment.—C. W. Gibson, Pres., Lone Star Fish & Oyster Co., Inc.

As far as the common carrier trucks are concerned, which we use to a great extent, we have experienced some delays which the carriers tell us is due to shortage of trucks and equipment, but so far have experienced no great delays and failure on the part of the motor carriers. However, we can frankly say that if the common carriers are not supplied with sufficient parts and equipment to keep up their rolling stock it will greatly handicap us in the shipment of our merchandise, for we do use trucks to a considerable extent. Some of their service is hard to duplicate by other means of transportation. We believe that a sufficient supply of trucks and parts and other equipment should be manufactured so that the trucks can continue their essential transportation for the duration.—S. L. Burbridge, T.M., Colgate-Palmolive-Peet Co.

We are selling about 80 to 85 per cent of our merchandise to war plants and, in spite of this, have had our requests for new trucks and trailers refused because it is claimed that common carriers can handle the business. They can handle it, of course, at their convenience; but, this is not always satisfactory to the war plants who are dependent on shipments to keep going.

We feel that an adequate number of new trucks and trailers should be built to keep highway transportation functioning in sufficient degree to take care of all shipments necessary to be made by this mode of transportation. You know as well as we do that very little new

Picayune Attitudes . . .

It is my belief that if the Interstate Commerce Commission and the old line truck companies would cut out picayune attitudes about allowing the operation of trucks over other than advertised routes, or grant some permits, it would help the transportation problem 25 per cent.

To make it more clear, if a common carrier tries to get a permit, nine out of ten times, 50 trucking companies buck him.

In this plant, we have trucks we could run but we are only allowed to operate them between here and Detroit and Toledo and then we have to license them out to another outfit to get into Detroit. One-third of our trucks are lying idle when they could be used.—W. W. Sherman, Mgr., The Electric Auto Lite Co., Foundry Div.

equipment is being given to the railroads and, if this policy is pursued for any length of time, it is certainly going to result in a serious breakdown in transportation, both highway and rail.—P. D. Barziza, T.M., Peden Iron & Steel Co.

Our operation has been affected to a considerable extent as our merchandise is shipped from Maine to Florida, to practically all other states east of the Mississippi, to Texas and California. First of all, our own trucking facilities have been greatly handicapped due to the curtailment of gasoline supplies and lack of tires. For the same reason, truck and rail pick-up service has been oper-

ating less regularly. Consequently, our shipments have been delayed—delayed not only right here at the point of origin, but all along the way. The delay in transit may be due to congestion in freight, transfers, side-tracking in order to give right-of-way to priority freight.

In addition to the above, several transportation lines will not pick up less than 500 lb. at one call. In many cases, we formerly used water and rail service which resulted in lower freight rates. Due to congestion, the steamship line has discontinued this service unless shipments weigh 10,000 lb. or over. This greatly handicaps us as our shipments never amount to such a figure, but normally approximate 500 lb. This means that our shipments, formerly routed by water and rail, must now be transported by all rail.—E. B. Anderton, Sec., The H. R. Nicholson Co.

We are dependent to a large degree, on highway transportation. We have never had a comparable service from the over-the-road trucker since they have been in existence. There not only exists a grave shortage of repair parts and equipment, but the manpower question with them, not only in this immediate territory, but in our contacts all over the country, is more serious than it is with other means of transportation.

Our operations in the United States are conducted at various locations. With few exceptions, we are continually receiving complaints and have handled during the past six months, a 500 per cent increase in the number of claims for loss or partial loss and damage in shipments. Besides, we have had approximately a 1000 per cent increase in the number of requests to trace and

SHIPPERS

TABULATION OF REPLIES TO D and W's SURVEY ON PRESENT TRUCK-TRAILER SITUATION

(Includes Manufacturers, Wholesalers, Jobbers and Brokers of various commodities, Retail Chains, Buying Syndicates, Food Processors, Nurseries, etc.)

GEOGRAPHIC DIVISION	HAVE YOUR OPERATIONS BEEN AFFECTED?		CHIEF COMPLAINTS	REMEDIES SUGGESTED	REMARKS
	YES %	NO %			
New England	33½	66½	Shortage of parts Shortage of gas Shortage of skilled men	Make more parts and more gas available	Majority of replies in this group were from firms totally engaged in war work, with high priorities, that ship principally by rail.
Middle Atlantic	75	25	Lack of new equipment Shortage of parts Manpower shortage	Release new equipment Manufacture more parts Ease government regulations	Truck operators said to be taking advantage of situation by imposing embargoes. Penalties suggested for receivers who refuse freight in off hours.
East North Central	73	27	Difficulty in getting parts Manpower shortage Inability to get new equipment	Release parts and new equipment Less government interference Stricter enforcement penalties	Increasing difficulties reported in handling I.L.I. and refrigerated shipments. Complaints on embargoes and rates numerous in this group.
West North Central	22	78	Lack of repairs and parts Delays Embargoes	Cut red tape re parts and equipment Eliminate 35 m.p.h. speed limit Use more substitutes	Majority in this group not seriously affected because of war work, use of rail facilities, etc. Embargoes by carriers on shipments of less than 1,000 lb. condemned.
South Atlantic	66½	33½	Lack of parts Manpower shortage Need of new equipment	Deferment for skilled men Release of new equipment End chiseling by truckers	Refusal of truckers to handle low rated commodities reported causing diversion of substantial tonnage to rail. Release of new equipment held vital soon. Despite terminal congestion of I.L.I. shipments, truck shipments are reported faster than rail.
East South Central	50	50	Shortage of parts Deterioration of equipment	More care in handling equipment Force Washington action	Deterioration of equipment, inexperienced help, poor repair jobs reported causing serious and continual breakdowns. Government regulations held too stringent.
West South Central	75	25	Need of new equipment Too much government regulation Rates, embargoes, delays	Congressional relief Lower truck rates to rail levels Allocation of material for new equipment	Delays caused by congestion reported increasing. Easing of governmental regulations believed imperative to relieve situation. Need of new equipment urgent. Politics held chiefly responsible for impractical regulations. Some believe truck and rail rates should be equalized.
Mountain	—	—	Returns from this area inadequate at	press time for representative compilation	
Pacific	72	28	Lack of parts and equipment Delays; manpower shortage Claim and rate troubles	Relief from OPA price freezing Keep essential men on essential jobs Consolidate more shipments	Pacific Coast held more dependent on motor transportation than any other section. Serious shortages of mechanics, parts and trucking facilities reported. Refrigerator service insufficient. Terminal congestion mounting. OPA rate-freezing on certain commodities declared confiscatory. Immediate relief called imperative to prevent paralysis of all West Coast motor transportation.

MOTOR CARRIERS

TABULATION OF REPLIES TO D and W's SURVEY ON PRESENT TRUCK-TRAILER SITUATION

(Includes Long Distance Movers and
Transfer and Motor Freight Operators.)

GEOGRAPHIC DIVISION	HAVE YOUR OPERATIONS BEEN AFFECTED?		CHIEF COMPLAINTS	REMEDIES SUGGESTED	REMARKS
	YES %	NO %			
New England	100	—	Lack of good mechanics Shortage of parts Inability to get equipment	Give us more tools and parts Release more gas	Lack of competent mechanics, adequate parts and proper tools said to be causing serious trouble in all New England States.
Middle Atlantic *	100	—	Parts inferior Equipment unobtainable Government regulations impractical	Release more trucks and trailers Reduce non-vital transportation	Cost of truck repairs reported excessive. New trucks declared only real solution of problem. Curtailment of non-vital shipping recommended. Government regulations called confusing.
East North Central	86	14	Manpower problems Parts Lack of new tractors and trailers	Relief from government red tape and regulations Improve gas and oil Abolish 35 m.p.h. limit	Lack of competent drivers and mechanics held chief cause of most equipment breakdowns. Need of new tractors and trailers urgent. Inferior gas and oil causing much trouble.
West North Central	100	—	Labor Shortage Parts scarcity Equipment wearing out	Eliminate government red tape Produce more parts Release tractors and trailers	Valves, carburetors and distributors reported impossible to get. Most Diesel parts unobtainable. Spring steel scarce. Cannot get new equipment. Orders placed before Jan. 1, frozen and storage charges alleged to be accumulating.
South Atlantic	100	—	Need of trained men Parts scarcity Equipment breakdowns	Defer needed men Give relief now before too late Release more gas and tires	Congestion serious at terminals. Gas allowance cut to danger point. Necessary to dismantle some tractors to get parts to keep others going. Tires cause continual anxiety.
East South Central	100	—	Gas rationing Rates unprofitable Government regulations	Release more gas and tires Cooperative action needed	Insufficient equipment to move farm produce reported. Government regulations held cause of unnecessary trouble. OPA price ceilings declared likely to put many truckers out of business.
West South Central	100	—	Inadequate help Parts short and poor Government regulations	Defer some skilled mechanics Release more parts and equipment	Pistons, bearings, valves and guides reported inferior. Some lines report drastic curtailment of service.
Mountain	100	—	Parts New equipment needed	Release more parts and trucks	Electrical parts, such as generators, voltage regulators, copper tubing wiring, etc. impossible to get. Delays of three months reported in getting mechanic's tools.
Pacific	100	—	Men scarce Equipment unobtainable Parts poor	New parts and new equipment needed	Manufacturers cannot supply new equipment even if buyer has government permission, some carriers report. New equipment imperative soon if California crops are to be harvested truckers state.

These tabulations are based on 10 per cent returns from a representative cross-section survey that embraced a mailing of 3,100 inquiries to shippers, carriers and warehousemen in all parts of the United States.

WAREHOUSES

TABULATION OF REPLIES TO D and W's SURVEY ON PRESENT TRUCK-TRAILER SITUATION

(Includes Merchandise, Cold Storage
and Household Goods Warehouses.)

GEOGRAPHIC DIVISION	HAVE YOUR OPERATIONS BEEN AFFECTED?		CHIEF COMPLAINTS	MAJOR REMEDIES SUGGESTED	REMARKS
	YES %	NO %			
New England	33½	66½	Scarce parts Tires and gas	Eliminate red tape Avoid over-loads	Firms in this group report receiving larger quantities of merchandise but that is coming by rail, instead of by truck. Formerly it was received by rail, delivered by truck. Now it is nearly all by rail. Gas rationing reported handicapping many truckers.
Middle Atlantic	66½	33½	Parts shortage Labor shortage Gas rationing	Make more parts and equipment available Celling prices for parts and repair jobs	Tire shortage and gas rationing affect most firms in this area. Manpower shortages said to be acute. Trucks for hire hard to get. Release of new equipment held necessary soon.
East North Central	54	46	Parts Equipment needed Repairs poor	Ease priorities Defer experienced men Eliminate non-essential shipping	Manpower situation held worse than transportation crisis. Lack of adequate warehouse facilities cause of anxiety. Manufacture of replacement parts called essential immediately. Local trucking reported seriously impaired.
West North Central	87½	12½	Equipment Parts Men	Cooperative action Release of parts	Release of government stock piles of equipment held only quick remedy. ODT regulations regarded as needless, particularly full loads, 35 m.p.h., special priorities, etc. Material used in replacement parts purchased said to exceed new parts required in manufacture of new tractors. Strict maintenance program called more necessary than ever.
South Atlantic	100	—	Delays Poor help	More training of new help	Pick-up service seriously reduced. Clearing houses for parts recommended at all central points.
East South Central	100	—	Parts Equipment Delays	Government regulations too stringent Release new equipment	Government interference declared largely responsible for much of present trouble since tendency to put social reforms ahead of practical administration is alleged to be motive behind many governmental directives. One firm has long distance drivers shop for parts in all cities on routes.
West South Central	68	32	Parts Equipment Repairs	Relief from government interference War first; civilian needs second; government too lax	"Business as usual" declared thing of the past. Duplicate deliveries, special time for receiving freight and special requests no longer possible. Tailgate deliveries must be accepted and extra service curtailed for duration is belief. ODT free booklet on "Preventive Maintenance and Inspection Procedure" recommended.
Mountain	50	50	Parts Equipment Repairs	Build up stock pile of parts	Insufficient and costly repair jobs and incompetent mechanics said to be major cause of many breakdowns. Recapping tires on over-the-road trucks said to be false economy in summer months.
Pacific	75	25	Men Parts Equipment	Release parts and trucks Defer some trained men Relief or breakdown soon	Release of new equipment held only sou'd remedy. Loss of experienced men handicapping warehouses as well as carriers. Many firms reported discontinuing truck transportation wholly or in part. War industries said to have taken most good mechanics and drivers. Use of women as drivers held no real solution.

establish delivery of shipments at destinations. This latter feature may be due partially to the fact that so many new government plants and ordnances have been established with the construction of new projects at out of the way places, have resulted in more confusion than you would ordinarily experience on a

construction job during normal times.—H. P. Hill, T.M., Grinnell Co.

With reference to common carriers by motor truck, the service today is definitely not up to standard. Whether or not this letdown is a result of inability to add to or repair equipment, I don't

know. It is quite possible that they are trying to pick their freight so that the equipment they are running will give them the greatest truck-mile revenue. As an example, about a month ago we called a particular carrier for over a week trying to get a truckload delivered to Detroit, Michigan. Their story was lack of equipment and breakdowns, and we were finally forced to call another carrier to furnish us a truck within two days.—John Middleton, T.M., Pioneer Paper Stock Co.

WAR HYSTERIA . . . Its Effect on Transportation and Victory

BEFORE we entered the war our government told its citizens in a series of nation-wide radio broadcasts, that of all the peoples of the earth we were the one nation blessed with the possession of the natural resources necessary to the continuation of life, liberty and the pursuit of happiness. No one questioned those statements because we knew they were true and most of us expected nothing but the truth to emanate from official circles.

When we entered the war, D and W warned that the immediate problem was transportation. Our manufacturing industries were highly efficient in mass production. That efficiency, however, has been hampered in large measure by the well-meaning but short-sighted regulations of many government bureaus.

The possibility of increased deterioration and mechanical breakdowns of motor equipment apparently was not anticipated when highway speed was reduced to 35 m.p.h. to save rubber. The use of substitute metals in repair parts was intended to save vital metals for war production, without foreseeing the inevitable, multiple breakdowns that have caused further transportation delays, required additional man hours for fabrication and repair, and the eventual use of as much or more metal as would have been used originally in standard grade parts.

When the manufacture of trucks, tractors and trailers for civilian use was stopped and the limited stock piles frozen, the chief consideration was that the armed forces must be adequately supplied with weapons and transportation. Evidently, the obvious fact that the war would place additional burdens on industrial transportation which, in turn, would require more rather than fewer new units to serve the war plants and the military, was completely ignored.

Even today all of our available highway transport equipment is not being utilized. Some of it is idle and deteriorating because its owners can't use it themselves and refuse to sell it at established ceiling prices. Those owners are sometimes called unpatriotic. But until the Golden Rule is practiced alike by government, capital and labor, what right has any one to condemn a man's attempt at self preservation?

Other thousands of pieces of highway equipment are making return trips either empty or only partially loaded because they are not licensed to carry all types of commodities. Why do we allow fruits and vegetables to spoil in a war-rationed nation, and deliveries of vital materials to be delayed, when it is possible to set aside, for the duration, regulations that restrict the full and efficient use of all available transport equipment?

Also, in the face of present conditions, is it reasonable for some plants to refuse to accept shipments after certain hours, or for some carriers to refuse to accept low rates or hard-to-handle commodities from war plants? Firms in both of these categories might well be considered unpatriotic. From a strictly selfish viewpoint, they would do well to consider the value of good will and its relation to their post-war business.

Then there is the all-important and ever-increasing problem of manpower. The War and Navy Departments could ease this situation by transferring from their present duties some of the specialists already in the armed services instead of continuing to seek others in war industries that can ill afford to release additional key men. In theory the army and navy classify their personnel according to civilian experience, but, in practice, this is not wholly true and transfers are said to be virtually impossible. It would not only be possible but relatively simple if outmoded traditions were set aside, red tape cut, and the intelligent personnel in both services encouraged to make suggestions without fear of displeasing a superior or of jeopardizing personal promotion.

We can continue our present war hysteria and unnecessarily waste lives by prolonging the war, or we can untangle the vicious circle of snarls within snarls by sane and unselfish thought and action that will assure a speedier victory.—H. S. W., Jr.

A great deal of our outbound movement is in rail carloads. A great deal of the essential inbound is by truck. Contract carriers operate back and forth between our plants. We have already begun to notice the difficulty that truckers are having in obtaining new equipment and replacement parts, and we are beginning to feel the squeeze, resulting from a reduction of the total highway equipment available for operation. We sincerely believe that unless additional material is allotted for new equipment and replacement parts that the war effort will suffer drastically.—C. W. Butler, Noblitt-Sparks Industries, Inc.

While we operate no trucks of our own, we do utilize the services of contract and common carriers. Our truck operation has already shown signs of trouble. The equipment which our contract carrier operates is usually turned in for new units every 15 months. Since new equipment cannot be obtained, replacement parts are necessary. These parts are beginning to become scarce and something must be and should be done to insure replacements of parts where necessary.

We are manufacturing materials for the armed forces and the government agencies are making demands for fast delivery. In order to insure a steady flow of these materials, truck and trailer replacement parts are necessary.

Now that most new factory buildings and machines used to manufacture war materials have been built and completed, the iron and steel previously used for that purpose can be diverted in some quantities to build truck trailers and replacement parts for such units to insure the prompt and expeditious delivery of war materials to the armed forces.—Douglas Miller, Gen. T.M., The Englander Co., Inc.

Conditions are becoming very bad in the motor carrier field as far as our observations show, and we have been obliged to curtail some of these operations and turn our freight over to car-loading companies and railroads.—R. Dubin, T.M., Cannon Shoe Co.

Insofar as outside transportation companies are concerned, due to the rate situation but a very small percentage of our business is handled by them. Here again the companies that we have employed have not shown any indications of breaking down from the war situation and their service has been practically normal.—Wm. A. Fecteau, T.M., Rumford Chemical Works.

We have sold most of our trucks engaged in long distance hauling on account of the difficulty of getting replacements and repairs. Most of our merchandise is moving by rail and the service in very poor shipments are only moving

(Continued on page 88)

Suggestions on

Wartime Replacement Parts

SPEAKING before the National Transportation and Maintenance Meeting of the Society of Automotive Engineers, recently, Robert Cass, chief engineer of The White Motor Co., reviewed the wartime changes which have taken place in motor truck parts and offered practical suggestions on how the life of existing equipment could be lengthened. With motor trucks operating on greatly extended schedules, with the tremendous transportation demands tempting overloads, and with the material situation flashing a warning to conserve, the resourcefulness and ingenuity of operators are challenged, Mr. Cass said. Only through sound judgment and well conceived policies can the emergency be met, he declared.

In outlining the equipment problem, Mr. Cass stated that approximately 4,800,000 trucks were now in operation and that in a normal year some 400,000 to 500,000 units would be produced for replacement purposes. However, during the past year only 43,130 vehicles were delivered to operators under the rationing rules of ODT. After deducting the light duty vehicles, this indicates, he said, that trucks are wearing out faster than they can be replaced.

In normal times this would be serious enough but, today, with increased work, with manpower shortages, and with the limitation on replacement parts, the situation is doubly serious, Mr. Cass said. Naturally, under the severe working schedule and with vehicles getting older, the demand for parts has greatly increased. Under such conditions, Mr. Cass said, every operator must share in the responsibility to keep vital transportation lines moving.

As brought out by Mr. Cass, the equipment situation brings added emphasis on maintenance procedures, and, since the power plant accounts for 80 per cent

• A report of the speech given recently by Robert Cass, chief engineer, The White Motor Co., before the National Transportation and Maintenance Meeting Society of Automotive Engineers.

of maintenance costs, special attention should be focused on the engine and attendant operating parts. However, vehicles now being built under orders of WPB are such that no operator need have any apprehension about them.

Speaking of material changes and substitutions, Mr. Cass pointed to the fact that many changes had followed adequate study and rigid tests. However, necessity had forced the use of steels and other metals earlier than they would normally had been employed, and the time has been too short to accumulate definite information as to results. In view of the emergency substitute materials, he offered the following general suggestions:

"1. Do not put sudden strains on axle shafts which might start an incipient crack which in turn would start a fatigue failure. Fatigue is the property which is still unknown with respect to emergency steels.

"2. Do not clash gears as the new steels are apparently more brittle when case hardened than the old ones, and until we develop the technique of overcoming this brittleness, we may have some trouble.

"3. Keep rigid inspection on all vital steering parts and in particular do not operate after there is lost motion in knuckle pins and other steering connections.

"4. Do not use excessive motor speeds in going down hill with motor engaged as brake."

In some cases the enforced wartime substitutions have resulted in products even better than those of peacetime and the transportation field will benefit from the metallurgical changes after the war. In other cases the composition of parts will merely constitute a temporary emergency measure. Mr. Cass gave a detailed explanation of the changes which have taken place, together with maintenance suggestions, as follows:

PISTONS—Originally made of primary aluminum, now made from secondary aluminum. Particularly important to watch the warm-up period and to use a good quality oil.

CYLINDER BLOCKS—No changes have been made in acceptable standards for cylinder block material. Brinell tests important to make sure there is sufficient residual chrome and nickel from scrap present to insure strength.

CRANKSHAFTS—Carbon steels with a slight addition of chrome have been generally used. This material is neces-

sary to insure good Tocco hardening. The Tocco process is a good guide in obtaining satisfactory material. Where vibration dampers are used employing rubber, more than usual care must now be exercised to keep oil from penetrating into the crude rubber. Natural rubber is employed in these dampers and reclaimed rubber cannot be used. Therefore, it is very important to keep the dampers clean and tight on the shaft.

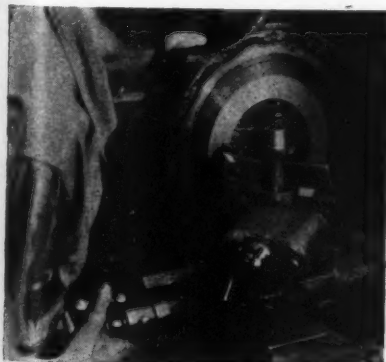
VALVES—The industry is now using two-piece valves in which the amount of austenitic steel has been reduced. The question, therefore, of valve clearances becomes of great importance as the coefficient of expansion changes with elimination of austenitic steel, and calls for regular checking. Since present materials do not have as high heat resisting properties as before, a lean mixture should be avoided at all costs. The valve compartment should be checked from time to time to be certain that varnish build-up does not result in sticking valves.

VALVE SPRINGS—Made to large degree in the past of Swedish wire which is no longer available. Now made of domestic wire which has stood up better under laboratory tests than Swedish wire. Should be kept clean and protected from corrosion.

BEARINGS—Where copper lead bearings have been used in high output engines, no change has been made. In engines using tin base babbitts the scarcity of tin has made necessary the use of lead base babbitts. Tests to date indicate very satisfactory performance provided the oil temperature does not rise to too high a level. The strength is materially affected when the temperature exceeds the maximum of 2250 degrees.

CONNECTING RODS—No appreciable amount of substitution has been made, but driver care is important in

(Continued on page 77)



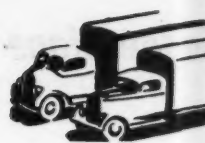
(Photos courtesy White Motor Co.)

... By resurfacing the clutch plate, a new clutch plate is saved.



... Modern tools and equipment, together with the latest repair methods, such as the cold welding process demonstrated in this photo, not only save time but a large amount of vital material. The operator is shown using a cold welding peening hammer. Cracks in cylinder blocks and heads can be repaired by cold welding, eliminating the necessity of complete replacement.

Motor Cargo ...



Easing of Parts Shortage Predicted By A.T.A. Head at Western Conference

Shortage of parts, the major problem of the trucking industry during recent months, will be materially relieved after July 1, and during the final quarter of 1943 the situation in regard to truck parts should have returned to normalcy.

That was the optimistic message delivered by Ted V. Rodgers of Washington, D. C., president, American Trucking Assns., Inc., at the fifth annual meeting of the Eleven Western States Conference of the A.T.A. at the Hotel Biltmore, Los Angeles, late in May.

"In the light of war conditions the trucking industry is in good shape," Mr. Rodgers said. "The future looks bright compared with the past year or so. Rubber no longer is our No. 1 problem. Manpower has become the chief problem. I have nothing but praise for William Jeffers in his handling of the rubber situation. He has been fair to the trucking industry in all respects. Jeffers is a railroad man, but I do not know of a trucking man in the country who could have done a better job. Substantial relief of the parts shortage has been promised by the government and I look for that situation to return to normalcy during the closing months of this year, with ample parts available then."

Rodgers declared that a year ago the trucking industry was handling 150,000 government bills of lading per month and is now handling 650,000 per month. Truck tonnage in March, 1943, was 25 per cent greater than in March, 1942, he stated.

The A.T.A. head told the western conference that the trucking industry apparently has "... the 300-mile limitation matter practically licked." He stated this was brought about by the arguments submitted to ODT by the association, backed up by thousands of letters from truck operators throughout the country, protesting against the restriction order.

The conference was attended by 150 operators representing 12 state and district trucking associations from California, Washington, Oregon, Montana, Idaho, Wyoming, Utah, Colorado, Nevada, Arizona and New Mexico. O. R. Craven, Pocatello, Idaho, conference chairman, presided.

In the election of officers, J. P. Spaenhower, Stockton, Cal., was chosen president; Ray Lilienquist, Salt Lake City, Utah, vice-president; Ray Shepherd, Salt Lake City, treasurer; and Shipley D. Burton, western representative of

Air Freight Is Coming, ICC Commissioner Declares

Interstate Commerce Commissioner William E. Lee told representatives at the Western States Conference of the A.T.A. at Los Angeles recently that in his opinion any plans for the future of transportation must include transportation of freight by air.

"Arguments now advanced against the practicability of air freight," he said, "are virtual renewals of arguments once voiced against truck freight. It used to be said that trucks and busses could never compete with the railroads. But trucks and busses do compete with the railroads today. Obviously, air cargo will not replace land and water hauling, but will get the cream of the lot, merchandise that must get there fast."

The ICC commissioner envisioned in the return of thousands of pilots from the armed services after the war a limitless source of air freight pilots in the post-war period. He predicted that scheduled and practical air freight lines will be an accepted fact within a few years.

A.T.A. at Washington, re-elected secretary.

A resolution was adopted recommending establishment of a clearing house filing system under which records of all drivers and other employees of members of the conference would be kept for reference by other trucking firms to whom an employee might apply for work. The records would list age, experience, character and other salient facts.

The manpower shortage and training of new employees within the trucking industry was one of the principal themes of discussion at the conference. Consensus of opinions expressed was that the manpower shortage in the western trucking industry is in an acute stage at present, with the prospective drafting of married men with children looming as a factor which may seriously aggravate the problem of replacements in the months to come. Various speakers emphasized the point that the industry must recognize the change war has created in the employment picture in that trucking companies formerly could take their pick of many applicants but now must spend effort, time and money to persuade people to work for them.

Emphasis was also laid on the point

that the obtaining of replacements for employees called to the colors must be treated as a major problem which merits the assignment of a competent personnel manager who must devote his full time to the task of getting replacements.

Interstate Commerce Commissioner William E. Lee of Washington warned the western operators that they must tolerate no departure from minimum standards of safety on the highways because of the war.

"Minor modifications of existing regulations have been made to meet wartime conditions," Commissioner Lee said, "but no major changes are contemplated. Safety of operation and of equipment is of even greater importance than in peace time. Because of heavier wartime loading of vehicles, highway accidents are more disastrous than ever. The loss of more precious cargo and of irreplaceable equipment is now added to the normally heavy price of accidents."—Herr.

ODT Amends Order 21 Re Gas and Parts Receipts

Commercial motor vehicle operators were relieved last week from the provisions of ODT General Order 21 which required them to sign receipts for gasoline, parts, tires or tubes and to endorse the receipts with their Certificate of War Necessity number. Commercial motor vehicles include trucks, buses, and taxicabs. The ODT's action was taken in an amendment to Order 21 which revised section 501.96 by eliminating paragraph (b) and consolidating paragraphs (a) and (c) into one paragraph.

Maintenance Committee Formed in Denver

Formation of a maintenance advisory committee to assist the ODT and operators in keeping essential trucks and other commercial motor vehicles rolling, was announced in Denver, Colo., during the month by E. L. Reilly, district manager for the ODT Motor Transport Division. J. M. Murphy, assistant manager for the Ford Motor Co., Denver, was elected chairman of a 27-man committee. D. B. Garrett, Denver Studebaker truck representative, is co-chairman. (Alexander)

• Atlas Storage & Transfer Co. of Pittsburgh has moved from Second Ave. in the Golden Triangle business district to 1247 Reedsdale St., Northside, Pittsburgh. Officials of the firm anticipate a 25 per cent increase in business. (Leffingwell)

"Hello, you Limey!"

"Very glad to see you," answered the Britisher. . . . The date: April 7, 1943. The place: A stretch of wasteland in Southern Tunisia, 42 miles from Gabes. The occasion: The historic meeting between reconnaissance patrols of the British Eighth Army, in three armored dingos, and armored forces of the Second U. S. Army Corps, in five Half-Tracks with 75-millimeter guns. . . . As Half-Tracks built by Autocar are helping to make history, so is their manufacture training the men

and women of Autocar to make better Autocar trucks for the days to come. You will want those trucks. In the meantime, we urge you to keep your pledge to the Truck Conservation Corps.

AUTOCAR

MANUFACTURED IN ARDMORE, PA.

SERVED BY FACTORY BRANCHES FROM COAST TO COAST



"For excellence of production"
for the Army, the Navy, the
Marine Corps, and the Air Forces.



FAULTLESS

TRUCK CASTERS

Speed Vital Supply Lines

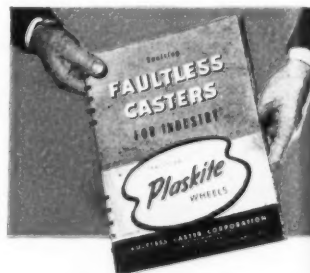
ON THE HOME FRONT

The urgent need of America is speed, and *more speed*, in moving fuel, food and materials all along the production front.

Every truck equipped with Faultless *Engineered Casters* is capable of carrying a larger share of the wartime load — increases your warehousing *capacity* with more rapid "turnover" of cubic space available.

Examine your trucks and replace all around with high-rated Faultless Casters. The kind with easy swiveling, uninterrupted raceways; oversize kingpins; extra heavy full-drawn horns; and many other constructional features developed during a half century of specialized experience.

There is no obligation in letting our Engineers examine your trucking problems with a view to improving performance at less cost per truck mile. We can provide you with the finest of high, medium or light duty casters, on proper authority. Write for Truck Caster Catalog 155, to Dept. DW-43.



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**200 SERIES
HEAVY DUTY
SWIVEL
CASTER with
ROLLER
BEARING
SEMI-STEEL
WHEEL**

Style No.	Dia. of Wheel	Lbs. Cap. Each
200-2	5"	400
200-3	6"	750

No. 200-4 with Semi-Steel Wheel



**100 SERIES SWIVEL CASTER
PLAIN BEARING WHEEL**

Style No.	Kind of Wheel	Dia. of Wheel	Lbs. Cap. Each
100-3	Semi-Steel	3"	200
100-4	Semi-Steel	4"	300
121-3	Rubber	3"	100
121-4	Rubber	4"	150
121-5	Rubber	5"	200
121-6	Rubber	6"	275

No. 100-4TG with Thread Guard

(For Right)
**500 SERIES RIGID CASTER
ROLLER BEARING WHEEL**

Style No.	Kind of Wheel	Dia. of Wheel	Lbs. Cap. Each
500-3	Semi-Steel	5"	200
500-6	Semi-Steel	6"	750

No. 100-4 with Semi-Steel Wheel



No. 500-3 with Semi-Steel Wheel and Roller Bearing

New Field Men Added To A.T.A. Rail-Truck Group

The national rail-truck committee of American Trucking Assns., Inc., has been enlarged through appointment by Ted V. Rodgers, president, to include 12 motor carrier territorial chairmen to match similar chairmen named by the railroads. These will act as liaison men with railway chairman in territories involved in any rail-truck coordination proposals. Mr. Rodgers has also appointed regional group committees.

Middle West territorial chairmen are: Earl N. Cannon (Yellow Truck Lines, Madison) Central Freight Association; Stanley Wasie (Merchant Motor Freight, St. Paul) Western Trunk Line committee; and Walter Mullady (Decatur Cartage Co.) Illinois Freight Association.

The central regional chairman is Harry F. Chaddick (American Transportation Co.) while Western territorial regional chairman is J. F. Weilbacher, (Viking Freight Lines, St. Louis). On the national committee from this section besides those named above are W. C. Mellender (Contract Carriers) Chicago; E. J. Buhner (Service Fleet Motor Express) Louisville; Charles P. Clark (Columbia Terminals) St. Louis; C. B. Fischback (Fischback Trucking Company) Akron, O.; and C. J. Williams (Hillside Garage Co.) Milwaukee.

REPORT DRIVERS AND GAS STATIONS CHISELING ON GAS IN BALTIMORE

BALTIMORE—Office of Price Administration investigators have revealed that petty chiseling among truck drivers and filling-station operators is largely responsible for the black market in gasoline here. Since all gasoline is rationed,

line delivered into their tanks for which they can furnish coupons. The bootlegger must get coupons for which he did not sell gasoline before he can deliver the fuel to a customer without receiving coupons.

A truck driver, with plenty of coupons, drives up to a filling station with which he has been dealing for some time. The trucker orders and has 20 gal. of gasoline put into the truck's tank. However, the filling station operator hands him a bill for 40 gal. The trucker hands the filling station operator coupons for 40 gal. of gasoline. The two agree to split the money the trucking company will pay for the 20 gal. that was not delivered.

Thus, the filling station operator has sold 20 gal. of gas, received coupons for 40 gal. He will be paid for 40 gal. and will split the price of 20 gal. with the truck driver. This leaves the station operator with coupons worth 20 gal. which he has not sold. He can sell the 20 gal. without collecting coupons, or he can sell the coupons. Coupons are reported to have been selling for 15 cents each. (Ignace)

Tire Inspection Change

The Office of Defense Transportation has amended its tire inspection requirements for commercial motor vehicles to allow a maximum period of 5,000 miles or six months, whichever occurs first, between inspections.

Previously, commercial vehicles had to have tire inspections made every 5,000 miles or every 60 days, whichever occurred first.

The time extension was made, the ODT said, to relieve low mileage operators from unnecessarily frequent trips to their tire inspection stations.

the black market consists not of getting illegal supplies, but of illegal distribution, it has been declared by OPA agents.

It has been pointed out filling stations can get only the amount of gaso-



**Single Responsibility
Unified Service for..
POOL CAR DISTRIBUTION
PACKING & CRATING
STORAGE
LOCAL CARTAGE**

AT THE FOLLOWING POINTS

Boise, Idaho
Eugene, Oregon
Helena, Montana
Klamath Falls, Oregon
Marshfield, Oregon
Medford, Oregon
Minneapolis, Minnesota

Oakland, California
Pendleton, Oregon
San Francisco, Calif.
Seattle, Washington
Sacramento, California
Spokane, Washington
Yakima, Washington

**FOR INFORMATION . . . WRITE MAIN
OFFICE CONSOLIDATED FREIGHTWAYS
TERMINAL SERVICES DEPARTMENT
P.O. BOX 3618, PORTLAND, OREGON**

**Fast Motor Freight Transportation
for the Nation**



RIGHT now Herman Body Company is working 'round the clock doing a big job for Uncle Sam. The Victory Program has eclipsed all pre-war production in our large plant. We'd like to show you pictures of the jobs we are now turning out, but that's impossible—restrictions forbid it.

But no eclipse is permanent. We know this war is going to end some day . . . and we're prepared for peace. In the meantime, since we can't build any new Vans and Van Trailers, we're glad we built 'em so good while we could. It's gratifying to know that HERMAN users are getting the utmost of service at minimum maintenance costs from their investment.

IT'S PATRIOTIC TO PROTECT YOUR EQUIPMENT

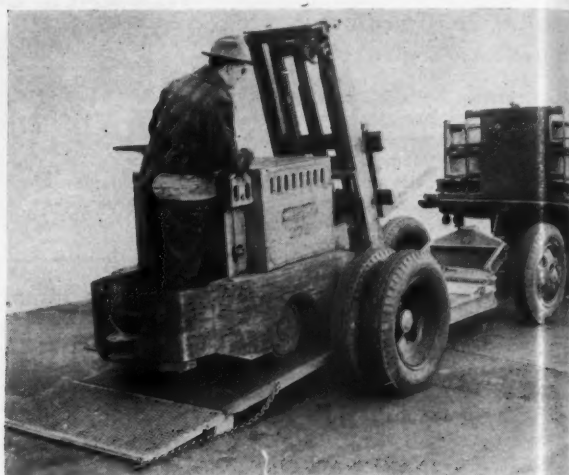
Protect the extra wear that is built into your HERMAN. Keep hinges oiled; take care of hardware; repair fender and body cracks promptly; tighten loose bolts; touch up rust spots . . . KEEP 'EM ROLLING.

HERMAN BODY CO. 4406 CLAYTON AVE.
ST. LOUIS, MO.

... Roller platform for auto truck showing shipping cases in place.



... Transporting battery truck for movement to outlying points.



Platform and Trailer Truck Facilitate Materials Handling

A ROLLER platform for loading materials on automobile trucks and a trailer for transporting battery trucks devised by E. J. Kidder of General Electric's Schenectady Works transportation department has reduced the time and number of trips needed to move materials.

The roller platform consists of five rows of old 2 $\frac{3}{4}$ in. by 6 in. conveyor rollers which were to have been scrapped. Only three Schenectady Works

standard size pallets could be accommodated on the truck. The width of the standard truck platform was widened 9 in. to 8 ft., permitting the roller bed to accommodate six of the pallets. In unloading, they are shifted by hand on the rollers and taken off the end of the platform by fork truck. A hydraulic jack arrangement is used to raise strips run lengthwise between the rows of rollers to prevent movement of the load enroute.

The trailer devised by Mr. Kidder per-

mits the battery truck to be towed by the loaded truck, eliminating the necessity of keeping a battery truck at each storage point, or making a special trip for one each time it is needed. To-day, when equipment is hard to get, and conservation essential, this is important. The trailer has a metal platform and a high tailboard which is lowered to form a runway. The battery truck is driven up the runway and made secure for the trip with chains.

Watch the Tires on Your Industrial Trucks

OPERATORS of this country's 30,000 power industrial trucks can help save war-precious rubber by following five simple tire conservation rules worked out by the firm's service engineers, according to C. B. Cook of Elwell-Parker Electric Co., Cleveland, O.

The rubber problem for these trucks is so great Parker engineers have been collaborating with rubber company re-

search men to develop tires made of new compounds. Conservation is also necessary because, with the trucks and tires being used around the clock every day in the week in many war plants, tires are wearing out much faster than in normal times.

Service engineers carefully analyzed the actual conditions under which these tires are used and, as a result, formulated

these five rules for operators to follow to get more miles of wear from their tires:

1. Avoid broken glass and sharp metal chips. Tires can be ruined in a few days by having pieces of rubber gouged out by sharp pieces of material.

2. Stay off the curb. Short cuts, in the long run, don't save time. Running

(Continued on page 60)



1. Avoid glass.



2. Avoid holes.



3. Avoid curbs.



4. Avoid oil.



EASTON TLC-6 — TIER-LIFT ELECTRIC TRUCK
CAPACITY — 6,000 LBS. SERVING THE NAVY
AND OTHER ARMED FORCES, ALSO WAR
INDUSTRIES. BULLETIN 162.

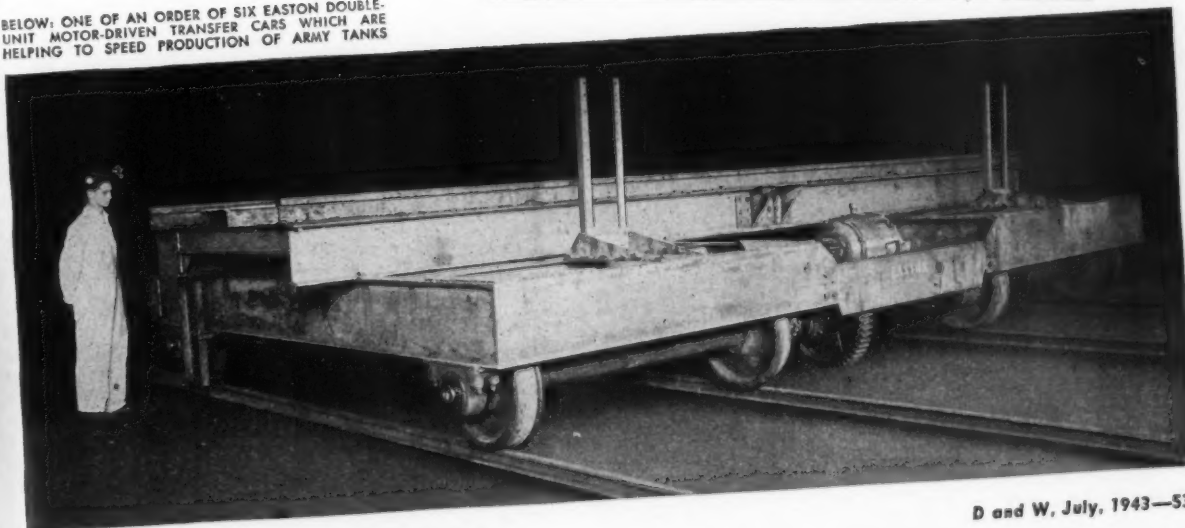


EASTON MODEL 1614 — INDUSTRIAL
TRAILER. CAPACITY — 30,000 LBS.
EASTON TRAILERS ARE HANDLING
GUNS AND SHELLS IN MUNITIONS
PLANTS. BULLETINS 191 AND 192.



EASTON ROCKER DUMP TRAILER
SIMILAR UNITS ARE SERVING AIRCRAFT
AND OTHER WAR INDUSTRIES
ALSO ROCKER DUMP CARS

BELOW: ONE OF AN ORDER OF SIX EASTON DOUBLE-
UNIT MOTOR-DRIVEN TRANSFER CARS WHICH ARE
HELPING TO SPEED PRODUCTION OF ARMY TANKS



Don't assume you can't get equipment—inquire.



Keep moving WITH EASTON

VICTORY MODEL ELECTRIC TRUCKS

- ★ To help conserve critical materials EASTON has limited production of electric trucks to six standard government-approved models: the low-lift, the tier-lift, the low-platform and the high-platform trucks of 4,000 pounds capacity; and the 6,000 pound low-lifts and tier-lifts. Let EASTON engineers demonstrate how one of these six basic models can be adapted to your requirements.

INDUSTRIAL CARS AND TRAILERS

- ★ EASTON cars and trailers are used in almost every industrial haulage operation — handling raw materials at their source, moving parts and finished products through production processes, speeding up work at distribution centers. Capacities range from 4,000 pounds to 250 tons. Every EASTON car and trailer is a Victory Model, using fewer critical materials wherever possible and built from the ground up for "E-Plant" efficiency.

ENGINEERING COUNSEL

- ★ EASTON specializes in engineered material handling equipment designed to meet specific operating conditions. For new ideas in material handling, for repairs, or for replacements write to: Engineering Counsel, Easton Car & Construction Company, Easton, Pennsylvania.

A-1001

Ogden Supply Depot Chief Cuts Storage Problems

Modern warehousing methods in use at Utah quartermaster depot are so planned as to meet a variety of problems in order to speed the quartermaster supplies to men in camps and at the fronts and at the same time scientifically conserve man power, time and warehouse space.

Importance of all of these considerations was emphasized by Major William G. Tanzer, depot warehouse officer, brother of M. J. Tanzer, manager, Crooks Terminal Warehouses, Inc., Chicago, in a recent interview in the *Salt Lake Tribune*.

Use of modern mechanical equipment, wherever possible, aids materially in getting these results, Major Tanzer pointed out, as he indicated some of the problems that must be met daily in deciding methods and requirements in each case.

Careful planning and consideration must be given to the types of commodities, the space to be filled, the length of haul from carrier to stack, and the equipment available, he explained.

Selections of space to be devoted to each particular type of property is one of the first problems, according to Major Tanzer. Some of the many factors that must be taken into consideration include storage of heavy machinery and supplies built to withstand the weather, which are stored outside. Damageable goods are stored in warehouses at proper temperatures and under conditions which prevent damage by moisture, dust or contact with light.

Fork Truck and Rolling Racks Solve Special Handling Problem



Courtesy Towmotor Corp.

To effect economies inherent in moving large unit loads far and fast, manufacturers whose operations involve inter-department hauling, temporary storage

and precise production-positioning of comparatively small multi-unit assortments of materials in a wide variety of sizes, shapes and types are utilizing special racks and are handling them with lift trucks.

This flexible "mass-movement" system has proved especially efficient in handling small parts from stock room to inspection, machining and assembly stations, according to engineers of the Towmotor Corp., Cleveland, O.

Racks are readily removable and can be adjusted on standards to accommodate many different types of loads. Two fully-loaded racks can be picked up and safely carried by a standard fork lift truck, rapidly moved through the plant to the proper department and spotted for temporary storage. The canter-equipment racks are then easily rolled short distances for exact positioning at work stations.

LOUISIANA PURCHASE

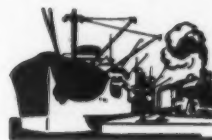
The Wisdom Moving & Storage Co., Lake Charles, La., has been purchased by C. W. J. Wright, Jr., president of the Globe Storage Co. of Baton Rouge, who now also serves as president of the newly acquired firm in Lake Charles. Ralph Watermeier is vice president and general manager, and Robert E. Leake of Lake Charles serves as secretary-treasurer.

LIFT TRUCKS HELP FIGHT FLOOD



... In the recent battle against the rising Illinois flood waters, The R. G. LeTourneau, Inc., Peoria, Ill., employed Mercury lift trucks practically 24 hours a day to transport sand bags to workmen building a protective dyke around the firm's plant. Most of the time the trucks had to operate in high water and heavy mud. Photograph was taken by George C. McNutt, manager, of LeTourneau's Advertising and Public Relations Department, who says it shows a new and interesting application of materials handling equipment.

Waterways and Terminals...



Proposed Assessment of Terminal Charges At Pacific Coast Ports Killed by ICC

Proposed assessment of terminal charges by railroads at Pacific Coast ports, resulting in \$1 a ton increase in all rates, whether export, import or domestic, as they apply on transcontinental export and import traffic handled at these ports, has been declared unlawful by the Interstate Commerce Commission.

Such an increase in the aggregate charges for the through transportation is not justified, the commission held, and would not be justified even if railroad claims were sustained.

The railroads also sought to revise the rules governing absorptions and terminal services covered by the existing rates plus the new charge, with the latter payable solely to the carriers.

ICC said there is sharp issue as to lawfulness of an additional charge for terminal services, citing protesting shippers and government agencies that cost of the service is included in the line-haul rates, that switching, checking and car detention are part of line-haul service.

Carriers, on the other hand, according to the *Chicago Journal of Commerce*, argue freight rates do not cover cost of services at terminals, and that simply because they always absorbed such costs by voluntarily paying them in the past, does not preclude their now establishing a reasonable charge.

In ruling against the railroads, ICC, held:

1. An obligation rests on the carriers to allow reasonable free time for loading and unloading, which is included in the line-haul rates.
2. That generally, carriers do not check carload freight on receipt of delivery and when such service is accorded it is for carriers protection, does not justify an additional charge and has no place in separate terminal charges.
3. The carrier proposal is not reasonable unless there is a clear cut showing that the existing rates are reasonable for the line-haul services alone, or that the increased total charges are reasonable for the aggregate services. "We cannot find there has been any substantial increase in the average cost of terminal services at these ports, and while the general average of the line-haul rates has decreased, their application to the existing minimum rates, without adding the proposed terminal charge, would produce slightly increased car revenues.

Ratings

Ratings and symbols assigned to telephone and telegraph operators by Orders U-3 and U-4, respectively, may be used to obtain maintenance, repair and operating supplies for offices, warehouses and other facilities essential to business operations, the War Production Board has ruled.

Pilotage Fees Exempt From Price Control

Charges and fees for pilotage and services of steamship agents have been exempted from price control by the Office of Price Administration.

Most ocean-going traffic into and out of ports in the United States, OPA pointed out, consists of vessels operated by the War Shipping Administration. The latter agency has made its own contracts for pilotage and the services of steamship agents in various ports.

These services are so varied and performed under such different conditions that price regulation would be impractical. Accordingly, in order not to interfere with the vital commerce involved, the exemption has been made. It is contained in Amendment 20 to Revised Supplementary Regulation 11.

Survey Shows Port Growth In Philadelphia

According to a recent Chamber of Commerce survey, the Port of Philadelphia's volume topped 44,000,000 tons in 1941, the last year for which statistics are available. Two billion dollars' worth of manufactured goods is handled yearly along the port frontage of 39 miles.

Philadelphia has 191 piers, equipped with apron tracks and double-deck storage facilities, with berthing space aggregating 159,000 lineal feet and 18,000,000 sq. ft. of pier and wharf area, of which 6,000,000 is covered.

There are 242 railroad tracks connected with the Philadelphia Belt Line, the B. & O., Pennsylvania and Reading railroads. Waterfront grain elevators have a capacity of 4,725,000 bu. Two coal tipples have a loading capacity of 100,000 tons daily. There are also two ore-loading piers. Adjacent to the waterfront are 48 warehouses of 6,700,000 sq. ft. capacity, representing 76,000,000 cu. ft. of storage space, of which 11,500,000 is coal storage. (Dash)

Grace Line Celebrates 50th Anniversary

Grace Line this year is celebrating the 50th anniversary of its establishment of regularly scheduled steamship service between New York and the west coast of South America. It is also the 50th anniversary of Grace's first large fleet of specially constructed steamships.

INCREASED DEPTH OF THE LAKES ALLOWS HEAVIER ORE LOADINGS

Increased depths prevailing on the Great Lakes this year has resulted in heavier loadings both of coal and iron ore cargoes, a recent survey revealed. Ships built to do so are loading down to 23 ft. with downbound ore cargoes, as a result of the increased depths in the Soo locks. Downbound loading depends on the depths available at the harbor and dock of destination as well as at the Soo. Downbound channels, at project depths, and most harbors on the Great Lakes permit 24-ft. loading, which is a depth not yet available at the Soo.

The real control of downbound loading is the locks, and the new MacArthur Lock and its approaches eventually are slated to make a 24-ft., and more, draft available. The five super-freighters of the Pittsburgh Steamship Co. and the

16 new vessels being built by the Maritime Commission for the ore trade on the lakes are designed to load to 24 ft., and will benefit from the new lock.

Most ore carriers outside of the foregoing, however, are not designed to load even to the 23 ft. now available at the Soo. The prevailing maximum at the locks and canal which by-pass St. Mary's Falls has been around 22½ ft. for the large ships with a few loading slightly beyond that. An increase of 6 in. loading depth to the large ships would mean around 500 tons more of ore per cargo. This increase, if taken advantage of, will permit the new carriers of the Pittsburgh Steamship Co. to establish new ore cargo records exceeding those now held by vessels designed for the Soo depths available when they were built. (Kline)

Warehouse Safety Problems

By H. W. HEINRICH

*Ass't Supt. Engineering & Inspection
Division, Travelers Insurance Co., and
Chairman, Safety Advisory Committee,
U. S. War Department*

• • •

• This is part of a talk made recently by Mr. Heinrich before the New Jersey Merchandise Warehousemen's Assn., Newark, N. J. In addition to safety it stresses the importance of materials handling and the proper use of materials handling equipment.

AT no previous time has there ever existed so serious a shortage of space, and so serious a shortage of manpower as well. These conditions require: (a) modern commercial equipment for materials handling; (b) space conservation and utilization; (c) Efficient use of labor. In order to meet these requirements there must be safe and efficient operating methods.

The development of warehousing is a modern industrial romance. Not so many years ago power equipment and true business methods were practically unknown. Any man who owned or could lease a storage shed, buy a few hand trucks and dollies, and hire a couple of husky men could call himself a warehouseman. Today, warehousing is a specialized business that requires top rank business management, capital, proper planning, accounting, inventories, transportation experts, tax experts, mechanical equipment, and trained personnel.

As I am by profession a safety engineer, I propose to comment on certain operational pitfalls that have come to my attention in servicing warehouses, and to point out the relation that safety bears to your current warehousing problems. But let me first enumerate some practical suggestions that may help you to meet the current emergency.

1. Not even one inch of space, vertically or horizontally, should be wasted.

2. Merchandise should not be spread all over the floor, regardless of how small a quantity. Pile it to the limit.

3. When warehousing property always make a record of its location in the warehouse on your locator cards.

4. Plan the location of storage first, and then go ahead with unloading from cars or trucks.

5. Plan the best method of handling before you unload from cars or trucks.

6. Unload freight cars as soon as possible; don't hold it a moment longer than necessary.

7. Sort merchandise immediately at the car and place it in storage at once, instead of unloading at a sorting location and then rehandling to storage.

8. Avoid all temporary warehousing. Warehouse property permanently in the final location.

9. Store materials from the wall to aisle, or in large center spaces, from center to aisle, and not from the aisle to center.

10. Take property from the front of the stack and not from the back.

11. Keep both the mechanical equipment and the men at the stack busy. Balance every operation. Don't put even one man more on a job than is actually needed, there is other work for him to do.

12. Keep the unloading operation going in a straight line directly from car into stack; don't break operations off in the middle.

13. Regulations and customs should not

influence you to the point of not being practical. If an idea of yours does conflict with a regulation, report it so that steps can be taken to change the regulation. Practical ideas will be given the "green light."

14. Remember that the men under you are part of your organization and want to know what is going on. You will find they will have ideas. Keep them informed.

15. Give instructions promptly. Telephone the party concerned, if necessary, and confirm afterwards.

16. Misfits must not be permitted to disrupt the work of good men. Find work that the misfit can do.

17. Lack of proper equipment necessitates improper and ineffective methods of handling. If possible, get enough of the proper kind of equipment.

18. Smoking in a warehouse should not be permitted. Fires destroy property which possibly cannot be replaced.

19. Fork-truck handling saves time, money, and men for a great variety of operations.

20. Make full use of double- or single-faced pallets and dunnage.

21. Always stack quick turnover material so that it can be taken down readily, even if you must sacrifice a few inches of height by using pallets.

These suggestions refer to conditions with which warehousemen are all familiar, but in these critical times their value cannot be overemphasized. I might well add that it is of the utmost importance that full use be made of available mechanical equipment and also that such equipment be properly maintained. Reference here is made to such equipment as: hand trucks (2 wheel and 4 wheel); trailers; fork-trucks; stackers or tiering machines; cranes (crawlers or tractor type, etc.); conveyors; monorails; elevators; chain hoists.

As to the relation of safety to your problems, may I call attention to the statements made by Mr. William Irvin, past president, U. S. Steel Corp., who now heads President Roosevelt's War Production Fund to Conserve Manpower: "In 1942, 52,000 workmen were killed in

accidents (32,500 in the plants and 19,500 away from work) and 4,400,000 were injured. The cost was about four billion dollars, and 450 million man days of work. This is equivalent to a complete shut down of every industrial plant in the country for a full day each month."

Warehousing, especially in New Jersey, has not kept pace with the rest of industry with regard to the conservation of its personnel, and is thus not only harming the war effort but is penalizing itself likewise by unnecessarily high compensation insurance rates.

In the state of New Jersey, approximately 5 per cent of the payroll for general merchandise warehouse operation goes for compensation insurance. This 1943 rate of \$5.10 is an increase of 8½ per cent over the rate of ten years ago. In New York State, the rates for the same period not only are lower, but have decreased. In Illinois, the rate of \$3.35 in 1932 has decreased to \$1.53 in 1943, a reduction of over 50 per cent. In many states, compensation rates over all have been reduced in the last 10 years. Likewise, the rates for many industrial operations have either been reduced or have advanced but slightly in the same period.

Incidentally, it should be kept in mind that compensation rates are derived from legally devised formulae, enforced by insurance commissioners. The rates are based primarily on the cost of the accidents that occur, thus the best way to reduce rates is to stop accidents. This can be done to the extent of at least 50 per cent from present levels, without high monetary expenditures and with resultant greater economy, efficiency and favorable effect on the war effort.

As industrial executives, you do not need to know all the details of accident prevention methods, but you should understand its basic principles and these can be stated briefly. I won't have time to prove each statement, but will be glad to go further into detail should it be desired. Meanwhile, believe me, I am stating nothing but fact:

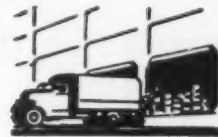
The total cost of accidents to industry is several times (4 times) greater than the total cost of compensation, medical aid and hospital.

An unsafe warehouse is invariably an inefficient warehouse and vice versa. Management is primarily responsible for the occurrence of accidents.

There are invariably one or both of only two conditions or circumstances that cause each accident, no matter what kind of an accident it is. One is the unsafe act of a person—the other is the existence of a mechanical or physical hazard. At least 50 per cent of all accidents are practically preventable and at least 98 per cent are of a preventable type except for monetary or other practical considerations.

(Continued on page 82)

Cold Storage . . .



Claims No Refrigeration Is Needed For Vacuum Sealed Dehydrated Pork

Dehydrated pork, following close on the heels of the development of dehydrated beef, is now going to the United Nations in large quantities, Herbert E. Robinson, assistant chief chemist of the Swift Research Laboratories, told the American Institute of Chemists at Chicago last month.

Pork that would have filled 10 ships during the days of the first World War can now be reduced to two shiploads of dehydrated meat and a little more than a shipload of lard.

Savings in shipping space, producing the same effect as increased ship production, is possible through a process developed by the meat industry in co-operation with the United States Department of Agriculture.

Fresh cooked meat is ground fine, then dried slowly and evenly under carefully controlled temperatures. The finished product, in the form of light nut-brown granules, contains less than 10 per cent moisture.

"When properly packed and vacuum sealed, it has good keeping qualities," Mr. Robinson stated. "It does not need refrigeration from time of packaging until used."

The meat is compressed during packing but resiliency of the tissues is not destroyed. When water is added later, the product has the same consistency as freshly cooked ground pork. The taste cannot readily be distinguished from that of freshly ground meat.

Mineral elements are reabsorbed from the meat juices during processing and temperature control keeps vitamin loss at a minimum. The high protein value is the same as in normally cooked meat, Mr. Robinson explained.

The lard is prepared in new war styles to meet army and navy specifications. It stays solid even at tropic heat and has a greater resistance to rancidity than ordinary lard.

Repair Parts Ratings Must Be AA-5 or Higher

Purchase orders for maintenance and repair parts for industrial and commercial refrigerating and air conditioning equipment must bear preference ratings of AA-5 or higher according to Limitation Order L-38 as amended by the War Production Board.

The rating previously required was

12 Miles of Pig Tails . . .

Pickled Canadian pigtails are a delicacy with some of the African natives and 12 miles of these pigtails—if they were placed curl to curl—have recently been shipped in a Canadian National Railways refrigerator car from Edmonton, Alta., to a southern United States port for export. The average pigtail for eating is 5 in. long and weighs half a pound.

AA-4 or higher. The present change is made to bring L-38 in line with the minimum preference ratings for repair and maintenance parts established by CMP Regulation No. 5 as amended May 14, 1943.

MOLASSES NOW BEING DEHYDRATED AND PACKAGED BY NEW PROCESS

A new process for dehydrating and packaging molasses, which is expected to make possible movement of molasses in greater volume from the Caribbean area to the United States, is being reported to trade circles by the Board of Economic Warfare.

The process is considered important both because tank shortage facilities in the Caribbean are taxed to capacity, and because a tanker shortage is seriously limiting adequate shipment of fluid molasses to this country. Molasses is needed especially for distillation of alcohol for the munitions industry.

It is estimated that between 200,000,000 and 220,000,000 gal. of molasses are in storage in Cuba, 60 million gal. in the Dominican Republic, 65 million in Puerto Rico, and between 25 and 30 million in Haiti.

As outlined by the BEW, the dehydration operation can be carried out at sugar mills with the simplest of equipment and at small cost. Finished solid blocks of molasses can be stored for indefinite periods in ordinary warehouses or sheds, and shipped, handled and stored as general dry cargo. Dehydrated molasses not only will not spoil, but it can

Cold Storage Plant Adds Dehydration Unit

DelNorte Ice & Cold Storage Co., Crescent City, Cal., has completed installation of a dehydration unit and has worked out a plan for cooperating with vegetable growers of DelNorte County and the Klamath River area of northern California for promoting new market outlets for vegetables through dehydration.

Initial contracts for dehydrating approximately 5000 tons of beets and carrots have already been received, the company reports.

The dehydrator unit follows the wind-tunnel design popular in fruit and vegetable drying plants. It has a furnace tunnel equipped with an electrically driven blower of the propeller type, modernized humidity control from the hot tunnel, and a drying tunnel into which loaded cars of vegetables are shunted. The unit features direct application of superheated air to the final car in the drying tunnel, thereby eliminating the necessity of reversing the dry car. —(Herr)

also be shipped in 40 per cent less space, it is said.

Dr. Lyman Chalkley and others of the Engineering Division of BEW developed the new solidifying process. Paper bag manufacturers, working in cooperation with the Engineering Division, developed the new packaging method.

Dr. Chalkley emphasizes that molasses treated by the new process is suitable when reconstituted, only for the manufacture of commercial alcohol, and not for feeds. He also says that it should be understood that this process has only been tried experimentally on a very small scale, and that it will undoubtedly be necessary for any interested companies to do further experimenting before entering on large-scale commercial production.

The new packaging methods will be made available at a purely nominal fee by the company concerned. Public service patents have been applied for on the dehydration process, so that it will be available free to all interested.

Any sugar mill interested in the process may get further information by writing the General Commodities Branch of Imports, Board of Economic Warfare, Washington, D. C.

Cold Storage of Furs

By FRED OPHULS

Special Consultant
American Institute of Refrigeration
Furs and Fabrics Committee

THE various animals whose fur is used for the trimming and manufacture of winter garments live in cool and cold climates. It is self-evident, therefore, that to preserve these furs from damage they must be stored during the warm and hot seasons of the year in cold vaults in which a reasonably cool air temperature is maintained. Most of the moth larvae appear to begin active life at about 50 deg. F. and, consequently, a fur storage temperature between 30 and 40 deg. F. is most suited to prevent damage to the furs from moth larvae activity. Fur storage houses accept not alone garments but trunks, chests, wardrobes, hampers, etc., the contents of which are never inspected or seen by the storage man. Nevertheless, full guarantee of protection against damage from moth activity is given. In other words, many of the articles stored may contain moths, larvae and eggs. Still the fact that they are stored in cold rooms safeguards them from damage during the storage period.

The refrigerating plant of most fur storages is operated only part of the day—that is, six, eight, 10 or 12 hours per day, the period of operation depending on the outside temperature. It follows that the temperature in the storage space varies considerably. During the time the refrigerating plant operates, the room temperature is lowered say to 30 or 32 deg. F. and, during the shut-down period, it may rise again to 40 or 45 deg. In addition, it is desirable to reduce the temperature in the cold storage to about 25 deg. F. once a week for a few hours during the summer months. Careful observations indicate that the variations in temperature accompanying the intermittent operation of the refrigerating plant are the best means of killing moths, larvae and eggs.

Besides this, it is important to maintain a relative humidity in the fur storage room of from 55 to 60 per cent. If the humidity in the room is too low, the furs will dry out and lose their luster and, if too high, say over 80 per cent, mold will form on them.

The design of the cold storage vault for furs must therefore not alone take into account the maintaining and variation of the temperatures above given, but must enable the storager to keep the moisture content of the air within safe limits.

To avoid an excessive influx of heat into these fur storage rooms, it is necessary to insulate them with one of the many heat flow resistant materials ob-

tainable in the market. Where these rooms are maintained at from 30 to 40 deg. F., an envelope of 4 in. of pure sheet cork or its equivalent is sufficient. Where furs are exposed from time to time to freezing temperatures of 25 deg. or lower, 6 in. of pure sheet cork or its equivalent should be used. This insulation will maintain the heat flow from the outer air into the cold space at an economical minimum.

The next important consideration is maintaining of the proper relative humidity in the cooler room air. Assuming that the temperature of the outer air is 95 deg. F. with a relative humidity of 50 per cent, the vapor pressure of the mixture is 0.4075 lb. per sq. in. on every square inch of outer exposed surface of the fur storage. If the temperature in the storage is 40 deg. F. and the relative humidity is 60 per cent, the vapor pressure in the air is only 0.97302 lb. per sq. in. of interior room surface. This latter pressure is less than one-fifth of the outer vapor pressure; so, unless the vapor-proof membrane is interposed between the outer air and the room air, excessive moisture leakage into the fur storage will result, increasing the cooling effect and the moisture content of the storage room air unduly.

This vapor-proof envelope is obtained either by spraying or painting the walls, floor and ceiling with an asphalt emulsion and gluing the insulating material dipped in the emulsion to these surfaces. For added protection, the second layer of cork is generally applied in a similar manner, whereas the interior surfaces of the insulation on the walls and ceilings are covered with cement mortar and a concrete floor laid on top of the floor insulation.

If carefully installed in this manner, the insulated surfaces are practically vapor-proof. Due to the yearly change of the ambient temperature, the floors, walls and ceilings of buildings expand and contract; the building may even settle somewhat. This movement ruptures the vapor-proof membrane and an increase in vapor flow into the fur storage will take place. By applying small quantities of heat in the room at proper points, the desired relative humidity can be maintained.

Assuming a reasonably vapor-tight insulated envelope, it is possible, by designing the cooling system for a temperature difference between the room air and refrigerant of from 15 to 20 deg. F., to obtain a relative humidity in the cold storage air within safe limits. If greater

refinement is desired, and to take care of a possible increase in vapor flow through the room enclosures, a constant relative humidity can be secured by providing in the cooling unit and automatically operated heating element which is actuated by a hygrostat placed in the cooler.

The cooling effect needed is applied in various ways. In some fur storages, pipe coils, through which the refrigerant flows, are run along the walls or placed in bunkers supplied with air ducts and sometimes fans for distributing the cooled air throughout the storage space to maintain an even temperature. In others, unit coolers are installed either singly or in pairs, depending on the dimensions of the space cooled.

Mechanical air circulation is not absolutely required, but it does help to maintain a more uniform temperature and will prevent warm spots between garments too closely packed.

A carefully designed, constructed and operated fur storage system will prevent all damage to the furs stored in them and maintain their luster and life almost indefinitely.

Change Due on Rail Rates For Frozen Meats

New transcontinental rail rates on frozen meats are expected soon. Transcontinental railroads have given their approval to 21,000 lb. carload import rates on fresh frozen meats from Pacific Coast ports to eastern, central and southern destinations. Publication of the rates awaits concurrence by the eastern territory carriers. Under the tariffs now in effect, a 40,000 lb. carload rate of \$2.70 per 100 lb. now applies on imported fresh frozen meats from Pacific Coast ports to rate bases 1,2,3,3A,4,5,6,13 and 14 destination. The approval just given would amend Item 1135 of Tariff 30E by providing 21,000 carload rates as follows: to rate bases 1,2,3,3A,13 and 14, \$3.29 per 100 lb., to rate bases 4 and 5, \$3.15, and to rate base 6, \$2.96.—Gidlow.

Sunday Shipment of Fish Legalized in Massachusetts

A measure to legalize Sunday transportation of fish was passed by the Massachusetts House of Representatives recently after members were told that the industry would remove from New Bedford to Rhode Island unless relief were granted the fishermen.

It was explained that yellowtail fish are brought into New Bedford and Gloucester and because of a lack of icing facilities and a great demand for the fish in New York on Mondays, the fishermen should be permitted to ship it over the road.

Some opposition was raised that it would result in forcing fish handlers to give up their day off to work on Sundays, but it was explained that the men who work on Sundays take time off during the week.—(Wellington)

People . . .



Thomas B. Wilson, former vice-president and general manager, Alaska Steamship Co., and subsequently chairman of Transcontinental & Western Air, Inc., has been promoted from colonel to brigadier general in the Army Transport Service, on the staff of General Douglas MacArthur in Australia.

Fred W. Eiselstein has been appointed principal motor transport expeditor, and **David A. Metcalf**, chief, local cartage unit in the Office of Defense Transportation. Mr. Eiselstein, a resident of Columbus, O., has been associated with the Lecrone-Benedict Ways, Inc., since 1934 and was vice-president in charge of traffic and operations. Mr. Metcalf, a resident of Kansas City, Mo., has been associated since 1935 with the Blue Line Transfer Co., of which he was president and general manager.

Harvey J. Elwell has been named general manager of the "American-made rubber" plant recently opened at Baytown, Texas. The government-owned plant will be operated by the synthetic rubber division of The General Tire and Rubber Co. in association with the General Latex Chemical Co. of Cambridge, Mass. Elwell, president of General Latex, has had long experience in the rubber business.

Lee Schoenfeldt, former economist and manager of commercial research for General Electric Co., has joined the radio division of Bendix Aviation Corp. as assistant marketing director.

Martin H. Kennelly, president, Allied Van Lines and of Werner Bros.-Kennelly Co., Chicago warehouse concern, is taking justifiable pride in the results of the Chicago Red Cross war fund drive which was conducted under his direction as chairman. A record sum of \$8,254,848 was raised, this being almost double the \$4,200,000 netted in the 1942 campaign. More than 2,000,000 persons contributed an average of \$2 each. (Slawson)

R. J. Wood has become freight traffic manager for the Pennsylvania R. R. at New York and his former post as western freight traffic manager at Chicago has been filled by **I. T. Marine**, former general freight agent there. (Slawson)

H. G. Huhn has been promoted by Libbey-Owens-Ford Glass Co. from industrial sales manager at Chicago to general traffic manager for the company with headquarters in Toledo, O. He has been with the company in various capacities for 14 years. (Slawson)

Ben Leventhal, of Roosevelt Cartage Co., Chicago, was elected president of

Central Motor Freight Assn. at the recent annual business meeting in Chicago. **Barney Cushman**, Cushman Motor Delivery Co., and **Walter Mullady**, Decatur Cartage Co., were elected vice-presidents; **C. John Viking**, Webber Cartage Co., secretary; **Harry Chaddick**, American Transportation Co., remains as treasurer and **Chester G. Moore** as chairman of the board. (Slawson)

The Board of Directors of Encinal Terminals, Alameda, Cal., recently promoted **D. L. Dullum** from vice-president to vice-president and general manager. **H. E. Van Horn** was re-elected president, and **S. M. Graham**, secretary.

Thomas E. Robinson, who formerly worked in the transportation division of the War Department, has become associated with Smith's Transfer & Storage Co., Washington, D. C. He will handle Government accounts of the Washington firm.

Charles E. Nichols, well-known warehouseman of Boston, has been appointed to head the recently opened Washington, D. C., office of the American Warehousemen's Assn. (Merchandise Division) at 703 Woodward Bldg., 15th and H Sts.

Mr. Nichols comes from a family long known in the merchandise warehousing business, his father having been the late John L. Nichols, of the Merchants Warehouse Co., Boston, traditional in the annals of AWA for his brilliant mind, his high ideals for the industry, and his invaluable contributions to important projects undertaken by AWA. Charles E. Nichols was a member of the execu-

tive Committee of AWA's Merchandise Division in 1936, having served previously during NRA days as a member of the Merchandise Warehousing Trade Code Authority, representing Region No. 1, New England. He retains his interest in the Merchants Warehouse Co. as a director but he has not been active in its management for the past six years, during which time he has been connected with the Tennessee Valley Authority. For over a year he has headed the TVA liaison office in Washington in its contacts with the numerous Federal war agencies.

George J. Flood, Southern California Freight Co., has been appointed vice-president of the Truck & Warehouse Assn. of San Diego and Imperial Counties, to fill the unexpired term of **E. H. Robinson**, who resigned following sale of his Arrow Transfer Co. to **Donald Glardon** and **F. A. Greene**. (Herr)

Justus Craemer, member and former chairman of the California Railroad Commission, has been appointed to the special war committee of the National Assn. of Railroads and Utilities Commissioners. (Herr)

Traffic and Transportation Assn., Pittsburgh, Pa., has elected as president, **Norman R. Heck**, traffic department, Jones & Laughlin Steel Corp.; vice-president, **M. L. Mollman**, Baltimore & Ohio Railroad; recording secretary, **J. R. Kunkel**, Illinois-Central System; financial secretary, **H. L. Zeber**, Canadian Pacific; treasurer, **William B. Guffey**, United Engineering & Foundry Co. (Leffingwell)

Leon Beatty Judd, comptroller of Delta Air Lines, Atlanta, Ga., has been elected a director of the company. Mr. Judd has been with the Delta organization since 1928. (Thompson)

Dale S. Tate, manager, F. & S. Transit Co., has been elected president of the Fort Wayne (Ind.) Transportation Club, succeeding **Ralph Blue**. Other new officers elected were: **Gerald Shoup**, traffic manager, Kroger Grocery and Baking Co., vice-president; **J. C. Shellenberger**, freight agent, Pennsylvania Railroad, treasurer; **Ludwig Belbutoski**, assistant traffic manager, Wayne Pump Co., secretary. **Clarence E. Butcher**, manager, Motor Cargo Co., and **Rollin H. Long**, General Electric Co. traffic department, were elected members of the board of governors. (Kline)

Capt. Amos Brooks, former executive secretary, Southwest Warehouse and Transfermen's Assn., Fort Worth, Tex.,



Charles E. Nichols

has been transferred to Granite City, Ill., from Chambersburg, Pa.

Neal Dow Becker, president, Intertype Corp., was re-elected president of the Commerce and Industry Assn. of New York at the annual meeting of the board.

Frank Harvey, well-known member of Los Angeles Transportation Club, is now on active duty as a Lieutenant in the army. (Gidlow)

W. E. Tice is newly-appointed vice-president, Truck-Trailer Mfrs. Assn. For the past 23 years he has been vice-president and general sales manager of Reliance Trailer and Truck Co., Inc. Well known on the Pacific Coast, he has been active in the Truck Owners' Assn. of California and the Pacific Coast Trailer Mfrs. Assn. (Gidlow)

John Dondoro, who was traffic manager of Lyons-Magnus Co., San Francisco, is now a member of the traffic department of the Food Machinery Co., San Jose, Cal. (Gidlow)

Capt. Wm. Fisher, supervising inspector of merchant marine, San Francisco, has retired, having reached his 70th year. He is succeeded by **Capt. J. P. Tibbets** of Alameda, formerly inspector of hulls and long-time master with the Matson Navigation Co. (Gidlow)

W. W. Finley, Jr., past president, Traffic Club of New York, was tendered a testimonial luncheon last month by the Club upon his promotion as assistant general traffic manager, the Pennsylvania Railroad, with headquarters in Philadelphia. He was formerly freight traffic manager in New York and has been with the Pennsylvania since 1910.

Margaret M. Connor, Lehigh Valley Railroad, was elected president of the Women's Traffic Club of Philadelphia at the organization's June meeting. Other officers named for the 1943-44 term are: **Marian K. Hansen**, Peter Paul, Inc.; **Florence Dean**, Esterbrook Steel Pen Mfg. Co.; vice-presidents; **Margaret Hanley**, treasurer; **Lucille N. Knowlton**, Foreign Freight Forwarders, recording secretary; **Margaret E. Cameron**, Baltimore & Ohio Railroad, corresponding secretary. Two new directors were also elected: **Helen G. Keller**, Keystone Lubricating Co., and **Elizabeth Hines**, Reading Railroad. (Dash)

Robert H. Herrnstein has been named acting general traffic manager of Northeast Airlines, Inc., succeeding **Donald A. Duff**. **Warren H. Smith**, formerly superintendent of stations, has been appointed assistant to Mr. Herrnstein. (Wellington)

Boston warehousemen are cooperating with the Coast Guard in securing enrollments among managers and employees. **Sherman Whipple**, of Wiggin Terminals, has been commander of the Plymouth Flotilla for about a year. (Wellington)

OBITUARY

Alfred J. Walker, 54, retired warehouse executive, died last month in St. Francis Hospital, Evanston, Ill., after suffering a heart attack at his home, 830 Mulford St., Evanston. Surviving are his widow, Jean; a daughter, and a son.

Walter H. Pix, 54, chief engineer, Terminals & Transportation Corp., Buffalo, N. Y., where he had been employed since 1928, died May 20 in his home at Buffalo. He formerly was associated with a Detroit cold-storage warehouse and joined the Terminals & Transportation Corp. when it took over the Detroit concern. (Toles)

Edward J. Meurer, 50, president, E. J. Meurer Trucking Co., Inc., and member of an old Staten Island family, died of a heart ailment at his home, 48 Ward Ave., Stapleton, N. Y. He leaves a widow, Mrs. Margaret Schaefer Meurer, president of the Business and Professional Women's Club of Staten Island, and two daughters, the Misses Carol and Marguerite Meurer.

Clare B. Tefft, 52, widely known transportation expert and executive of the Chamber of Commerce, Toledo, O., died accidentally when his automobile overturned May 28. Mr. Tefft had been transportation and foreign trade manager of the Toledo Chamber of Commerce for 15 years, and previously was an executive with the Pere Marquette and Michigan Central lines, and also served Chambers of Commerce in Lansing and Kalamazoo, Mich. He was known nationally as one of the leaders in the fight against the "Southern Governor's" case, an effort to change the country's freight rate structure. Last year he received the congratulations of Joseph B. Eastman, director of ODT, for his plan, adopted nationally, for shipper and railroad cooperation. He was vice-president of the National Industrial Traffic League and a former chairman of the Great Lakes Regional Advisory Board. In Toledo he was instru-

mental in organizing the Share-the-Ride movement last winter and was prominent in the Toledo Board of Trade, Transportation, and Rotary Clubs. (Kline)

Charles H. Hamilton, 71, New Orleans business and civic leader, died June 3 after a protracted illness. He began his business career in 1886 in the local offices of the Illinois Central Railroad, with which he remained until 1895. A former president of the Assn. of Commerce, Mr. Hamilton was responsible for many outstanding civic developments. He was active in many civic and business associations. (Thompson)

George Meade Holstein, 80, pioneer railroad developer and former head of Clyde Steamship Line, died May 29, at Santa Monica, Calif. In the early days of railroad expansion, he was identified with the Chicago, Milwaukee & St. Paul and with the Philadelphia & Reading. Later he was associated with the R. T. Wilson Co., New York financial house, and with Clyde Steamship Line. He became president of the latter concern upon the death of its president, William Clyde. Among his other financial interests was the Robbins Dock Co., Brooklyn, N. Y. Mr. Holstein is survived by two daughters and a son in Southern California. The body was shipped east for interment in the family plot in Norristown, Pa., where members of the Holstein family have been interred since 1636. (Herr)

Harry Edward Sutton Wilson, 75, president and treasurer of the Campbell Stores, Hoboken storage warehouse firm, died in his home, 12 Brunswick Rd., Montclair, N. J. Mr. Wilson, who also was vice-president of Campbell Stores Realty Corp. of Hoboken, was born in New York and lived in Hoboken before moving to Montclair 23 years ago. He was president for five years and vice-president three years of the Warehousemen's Assn. of the Port of New York. At one time he was president of the American Warehousemen's Assn., merchandise division.

Improved Methods Speed Storing

(Continued from page 40)

is excessive weight on the floors eliminated, but materials too heavy to be conveniently handled by regular hand pallets or other methods are easily moved from place to place. It also functions as a medium to transfer loads on and off elevators, thus doing away with the deadheading of truck and driver between floors. Obviously, all this results in a considerable saving of time and effort.

Watch the Tires on Your Industrial Trucks

(Continued from page 52)

tires over obstructions chews up rubber and tears the tires off rims. It may also damage the truck.

3. Keep out of chock-holes. Avoid depressions and cracks in the floor or pavement. Jolts help destroy tires.

4. Keep out of oil. Oil and grease

attack rubber. Tires should be cleaned periodically.

5. Start slowly. Rabbit-jump starts can tear miles from tires by grinding off the rubber.

Texas Firm Becomes Member Of Associated Warehouses

Koon-McNatt Storage & Transfer Co., Dallas, Texas, has become a member of the Associated Warehouses, Inc. The Koon-McNatt organization operates a modern warehouse of steel construction in Dallas and renders a complete warehouse service. O. M. Koon is president.

LYON BUYS MILLER

Lyon Van & Storage Co. has completed negotiations for purchase of the **Miller Moving & Storage Co.**, San Francisco, including the Turk St. warehouse operated by that firm and four motor units. Redecoration and renovation of the building has been started by the new owners. **Hugh McGlynn** has been named manager by the Lyon Co. (Herr)

LEGAL NEWS...

By LEO T. PARKER
Legal Editor



What is Bailment?

Under certain circumstances a warehouseman may not be a legal bailee of the owner's, or bailor's, merchandise. If he is not a legal bailee the usual law pertaining to the duty of a warehouseman to use "ordinary" care to safeguard stored goods is not applicable. In *Lewis v. Ebersole*, 12 So. (2d) 543, Ala., the higher court said:

"In order to constitute a bailment the bailee must have voluntarily assumed the custody and possession of the property for another. If this is not done, the relation is either that of a license or a lease. . . . When goods are lost out of the possession of the bailor, negligence is *prima facie* imputed to him, and he has the burden of producing evidence that the loss was not due to his negligence."

Carriers Lease Trucks

A modern higher court recently held that evidence that companies which object to a grant of a franchise, or certificate of public convenience, to a competitor to lease or rent equipment is important testimony when determining whether the franchise should be granted.

For illustration, in *North Alabama Motor Express v. Rookis*, 12 So. (2d) 183, Ala., it was disclosed that the Public Service Commission granted a certificate of "convenience and necessity" to a company to engage in the business of a "common carrier" of specified classes of freight between points within the State of Alabama.

On the public hearing before the Commission other motor carriers, rendering a similar service, presented evidence in opposition to the grant of the franchise sought.

The higher court approved the Public Service Commission's grant of the franchise and said the evidence was important that motor carriers now engaged in like transportation were leasing many private trucks to supplement their equipment. The court said:

"Not that leasing some trucks as a reserve to meet fluctuating demands would evidence inadequacy of existing facilities, but evidence of leasing in large numbers, and the frequent calls for service, was properly admitted as a circumstance to be considered in connection with the whole evidence disclosing the over-all situation with which the Commission must deal."

Must Prove Facts

Irrespective of the character or classification of a litigation, the party who

filed the suit must prove all relative facts, or he is not entitled to a favorable verdict. This rule of law is particularly applicable to suits filed by employees to recover additional wages under the Fair Labor Standards Act.

For example, in *J. F. Schneider & Son, Inc. v. Justice*, 168 S.W. (2d) 591, Ky., it was shown that an employee sued his employer under the Fair Labor Standards Act for payment of overtime wages claimed to be due. The employee contended that the employer had not paid the minimum wages specified by this law. The employee further stated that "he was an employee of the defendant company from Oct. 24, 1938, and was regularly employed by the employer from that time until June 24, 1939." He then stated his agreed wages for a full day's work and the extra labor he was required to perform over and above that specified in the federal statute, *supra*, which, according to his calculation, amounted to \$96.03 for which the employee sued.

However, at no time did the employee contend or prove that the business conducted by the employer was interstate business. Neither did the employee aver that the particular kind or nature of employment that he performed was essential to or a part of any such interstate commerce. In refusing to allow the employee's claim, the higher court said:

"It will, therefore, be seen that plaintiff (employee) made no allegations in his petition sufficient to bring his cause of action under the Federal Fair Labor Standards Act, 29 U.S.C.A. 201."

Taxation Approved

Considerable discussion and disagreement has arisen in the past over the correct answer to the two legal questions: Has a state the right to tax all or only a part of motor trucks owned by a corporation? If this state may legally tax all trucks owned by a corporation, may other states also tax all or a portion of the same trucks?

For example, in *State v. Northwest Airlines*, 7 N.W. (2d) 691, it was shown that all of a corporation's airplanes were in Minnesota from time to time during the year 1939, carrying passengers, property, and mail, and they came into this state also for the purpose of periodic overhauling.

On May 1, 1939, there were present in Minnesota for at least part of the day 17 airplanes. On that date, the total length of the routes over which the cor-

poration was operating its scheduled flights was 2,466 miles. Of this total, 320.2 mi. were maintained in Minnesota. The scheduled plane mileage on that date over all of these routes was 14,414 mi., of which 2,348.4 mi. were in Minnesota.

The corporation filed its tax return for the year 1939 in which it included a portion of its airplanes at the full value of \$77,000. This valuation was based on planes in the state on May 1, 1939. Later, an additional assessment was made by the county auditor in which he included all of the remaining airplanes owned by the corporation at the full value of \$511,500.

The higher court held that the state of Minnesota could legally tax all of the planes owned by the company.

Title Changes

Recently, a higher court held that if within the same state the title of goods changes from the seller to the purchaser, the goods are immediately subject to taxation by the state authorities.

For example, in *Department of Treasury v. Globe Corp.*, 46 N.E. (2d) 830, Ind., it was shown that a manufacturer in Indiana entered into a contract with a purchaser located outside the state to manufacture certain merchandise. When this merchandise was manufactured the purchaser was billed for it. The purchaser paid for the merchandise but the manufacturer held it in his warehouse under the agreement that upon receiving orders from the purchaser, accompanied by shipping tags and completed bill of lading forms, the manufacturer would ship the stored goods to the purchaser's customers.

The legal question presented the court was whether officials could collect from the manufacturer the Indiana state sales tax. It was contended that since the purchaser was located outside the state the sales were interstate transactions. However, since the goods remained in the manufacturer's warehouse, subject to instructions from the purchaser, the higher court held the goods subject to Indiana taxation.

Interstate Commerce Act

The provision of the Interstate Commerce Act that carriers may file suit for unpaid freight charges cannot be altered by tariffs.

For example, in *Henwood v. McCallum & Robinson*, 167 S.W. (2d) 981, Tenn., it was shown that the tariffs provided a "floating-in" rate for shipment of merchandise from outlying points to Memphis and when the merchandise was reshipped from Memphis the tariffs provided for a charge of the through rate from the outlying point to the destination, subject to a credit of the "floating-in" rate. However, the original local rate from the outlying point to Memphis could be charged if the merchandise was not reshipped within two years. With respect to when the carrier may sue for unpaid freight charges, the court said:

"It would be departing into the realm of speculation for us to conclude that the Con-

gross intended to fix a limitation upon a right of action that could be changed, or altered in any way, by a tariff agreement between carriers and shippers as contended for in the instant case."

This decision, of course, means that provisions of tariffs are void which contradict or vary the Interstate Commerce Act.

Carrier One-Third Liable

Occasionally a warehouseman, the owner of goods, and a private carrier are each and all negligent indirectly for loss of goods.

For example, in *Producers Pipe Line Co. v. Douglas Guardian Warehouse Corp.*, 48 F. Supp. 161, Tenn., it was shown that an employee was hired both by a warehouse company and the buyer of a cargo of kerosene. A fire started because the owner of the vehicle, being used to transport the kerosene, was guilty of negligence in failing to insulate the exhaust pipe of the engine. The employee also was negligent.

In other words, legally, the warehouse company, the owner of the transported merchandise, and the carrier were negligent.

The question presented the court was: For what, if any, part of the value of the merchandise is the carrier liable?

The court held the carrier liable for two-thirds the full value of the destroyed goods.

Individuals Omitted

When deciding a legal controversy involving either the state constitution, a state statute or a city ordinance, the court must rely strictly and solely upon the specific words. An outstanding example of this law is found in *Bourland v. State*, 167 S.W. (2d) 972, Tenn.

In this case it was shown that a state law provides that "every corporation, co-partnership or company, and every association whether incorporated or unincorporated," must perform certain acts, as obtaining a license. An individual violated the law and the lower court fixed his punishment at a fine of \$5,000 and confinement in the county jail for 90 days. He has appealed to the higher court contending that he was not liable because the law did not specifically enumerate an individual. In upholding this contention, and holding the individual not liable, the court said:

"The Legislature did not include individuals within the scope of the act, and the courts are without right to enlarge or amend the same."

Commission's Order Revoked

It is well established law that any and all orders and regulations granted by a commission are void unless the testimony proves that the commission complied in all details with valid state statutes.

For instance, in *Commission of Texas v. Red Arrow Freight Lines*, 167 S.W. (2d) 249, Texas, it was disclosed that the Commission granted Robinson Truck Lines, Inc., what was designated a "reroute order," which permitted it to operate motor freight services over certain

highways between certain Texas cities as an alternative route. Another trucking company owned certificates of convenience and necessity to operate through and intermediate points freight services between the same cities. But over a more circuitous and longer route. The reroute order limited its operations to through freight and by trucks over the longer route. The latter trucking company sued and asked the court to revoke the order granted by the Commission. In granting the request, the higher court said:

"The Motor Transportation Statutes do not vest in the Commission the power to grant appellant the authority to operate the reroute motor carrier service over the public highways involved in absence of the statutory prescribed application, notice, hearing, and a finding based upon substantial evidence that the public convenience and necessity require or need the reroute service."

Fair Labor Standard Act

According to a late higher court de-

cision the Fair Labor Standards Act permits truck drivers to work 60 hours each week without being subject to payment of the minimum compensation for injuries specified by the law.

For instance, in *Town of Winnfield v. Jackson*, 10 So. (2d) 655, La., it was shown that a motor truck driver was seriously injured while attending to his regular duties. It is conceded that the driver was paid compensation for a period of 13 weeks at the rate of \$9.60 per week, or a total of \$124.80. The driver contended, however, that in view of the applicability of the Fair Labor Standards Act of 1938, he was entitled to a minimum of \$20 per week during said 13-week period.

However, since the driver averaged only 58 working hours a week the higher court refused to hold the driver entitled to recover a minimum compensation of \$20 a week.

LEGAL ..

Questions and Answers

... The Legal Editor will answer legal questions on all subjects covered by D and W. Send him your problems, care of this magazine. There will be no charge to subscribers for this service. Publication of inquiries and Mr. Parker's replies give worthwhile information to industry generally

Question: About three years ago we hired a manager for one year at \$150 per month. The contract began Jan. 1. We completed the contract, but did not make another contract. We have decided to discharge this manager and he wants us to pay him \$150 to the coming January. He says our contract still is in effect although we did not sign another contract after the first one expired. What are our obligations in this matter. *Allis Transportation Co.*

Answer: Many persons become involved in litigation not knowing that a contract may automatically extend itself. It is well established law that a contract for any service, or purpose, or employment, storage, rental, transportation and the like is automatically extended for its same period if neither contracting party notifies the other that the contract will be terminated, or will be continued on a different basis.

For illustration, in *Magnolia Warehouse Co. v. Davidson*, 38 S.W. (2d) 634, it was shown that a warehouseman and an employee entered into a written contract by the terms of which the former agreed to hire the latter for one year and pay him \$250 per month. At the end of the first year the employee was permitted to continue in the employment and at the termination of a few months of the second year the warehouseman discharged him.

The employee sued to recover salary from the date of his discharge to the end of the second year. The warehouseman attempted to avoid liability on the grounds that he had not contracted to employ the employee the full second year. However, since a new contract was not

made at the end of the first year and the same relation between the warehouseman and the employee continued into the second year, the higher court held the warehouseman liable for payment of the employee's salary for the remainder of the second year.

On the other hand, modern higher courts hold that an employee must try faithfully to obtain other employment. If, for instance, he can get another position at \$150 per month, or more, salary you are not obligated to pay him salary for the remainder of the year. In other words, the employee cannot demand that you pay him unless he makes every reasonable effort to get other employment and fails to get another job or position.

Question: Have you any records of higher court decisions on the law of night watchmen? In other words, when is a warehouseman liable if the warehouse burns and stored goods are destroyed when there is no watchman on duty. *Highland Warehouse.*

Answer: Broadly speaking, the care used by warehousemen with respect to watchmen, to safeguard stored goods, is dependent upon the attending danger.

For example, in *Waldo Warehouse Co., v. Lewis*, 141 S.W. (2d) 28, it was shown that a night watchman was employed regularly to watch and guard the warehouse against fires. However, on Saturday this regular watchman was discharged. The warehouse burned at about two o'clock that morning. The owners of the destroyed goods sued the warehouseman to recover the value of

(Continued on page 102)



Plan for Future Sales By Air Cargo, Wolfe Urges

Warning that day-dreaming about the future of air cargo must be discarded in favor of immediate planning for faster selling by industrialists, Thomas Wolfe, vice-president, Western Air Lines, Inc., in a talk to the Sales Managers Assn. of Los Angeles, recently, explained how business can adapt itself to post-war aviation by fitting problems of merchandizing into rapid transportation facilities after the war.

Four types of air transport systems he stated are likely to develop: ultra high-speed, high altitude planes for airmail, fast express and passengers; a feeder service connecting trunk lines; cargo carriers capable of hauling huge tonnages of freight throughout the world, and pick-up service for undeveloped areas, connecting with main lines. He added that he believed helicopters can be expected to serve as slow-freight auxiliaries to fast airline services.

Post-war air cargo will be handled, Mr. Wolfe believes, at about 10c. per ton mile. Private planes, he stated, will have a major influence on post-war traffic in a comparable relation to the automobile's influence on surface transportation up to the start of World War II. (Herr)

New Trans-Gulf Route Links Americas by Plane

Uniting North, Central and South America by a direct air service across the Gulf of Mexico from the new international air gateway of New Orleans, stratoclippers of Pan American world Airways are now providing a vital communications link serving the defense of the Western Hemisphere.

Service was inaugurated last month when a four-engine Boeing stratoclipper, one of the fleet that will fly the route, took off from the New Orleans airport early on the morning of June 13 with 14 passengers aboard, including Juan T. Trippe, president of Pan American.

The 2,000-mile route will be flown, using the 22-ton high-altitude stratoclippers, on a schedule calling for thrice-weekly service, leaving New Orleans on Sundays, Tuesdays, and Fridays and leaving Balboa, Canal Zone, on Mondays, Thursdays, and Saturdays.

Flight time from New Orleans to Guatemala City is five and one-half hours and to Balboa 12 hours. Thus, every city in the vast Mississippi River Valley is now brought within 24 hours of the strategic Canal Zone.

Intermediate stops are made at Merida, Mexico; Guatemala City, Guate-

mala; and Managua, Nicaragua. South-bound travelers using the New Orleans-Canal Zone route can continue their journey to any part of Central or South America by using the Clipper planes of Pan American and its affiliated companies.

Kaiser's Air Freighters To Take Off in Spring

The giant cargo-carrying flying boat designed for Henry Kaiser by Howard Hughes on order of the War Production Board, will take to the air early next Spring, at least two months ahead of schedule.

Tests on a scale model of the huge plywood ship, designed to carry 120,000 lb. of cargo, were completed last month. Except for minor adjustments, the plane is expected to live up to all the claims made in its behalf during the controversy in Washington last summer over the practicability of a cargo-carrying

plane of the proportions suggested by the Messrs. Kaiser and Hughes.

The scale model, which is 16 ft. long, underwent every orthodox trial and a number of special tests devised to disclose possible flaws without uncovering any major deficiencies, WPB officials said.

Airplane experts have assured the WPB that, under modern methods of testing, models properly constructed will react exactly as the actual plane and that performance records hung up in such tests forecast accurately the behavior to be expected from the finished plane.

On the strength of the reports, the WPB has accorded special priorities for materials to rush three full-scale planes to completion. The first, intended for non-flying tests, is to be completed in the winter. The second, to be constructed for actual flight, will leave the ground some time in March, and the third, also intended for actual flight, will be put into the air in the late spring or early summer.

The three planes are to have wing spreads of 320 ft. and will be 218 ft. in length. Each will have eight engines, have a fuel-carrying capacity of 8,000 gal. and will be capable of developing a speed of 174 m.p.h.

(More on pp. 76, 104)

Distribution Worldwide

Middle America Hailed As "New Frontier"

Middle America, the countries whose continental backbone units North and South America, was pictured by Wm. K. Jackson, vice president, United Fruit Co., as "a new frontier area for venture capital," when he addressed a joint luncheon of the Chicago Assn. of Commerce and the Export Managers Assn. recently.

Mr. Jackson discussed the present status of our trade with Mexico, the Central American states and the islands of the Caribbean area. It is axiomatic, he said, that foreign trade cannot be entirely one-sided. Products of Middle America he pointed out are not essentially competitive with what we produce.

We have the ability to purchase and the need for the raw materials of their farms, forests and mines and they, in turn, lack and need the products of our factories and fields. They should produce more of the things we need, so that

we can sell them more of our manufactured articles." (Slawson)

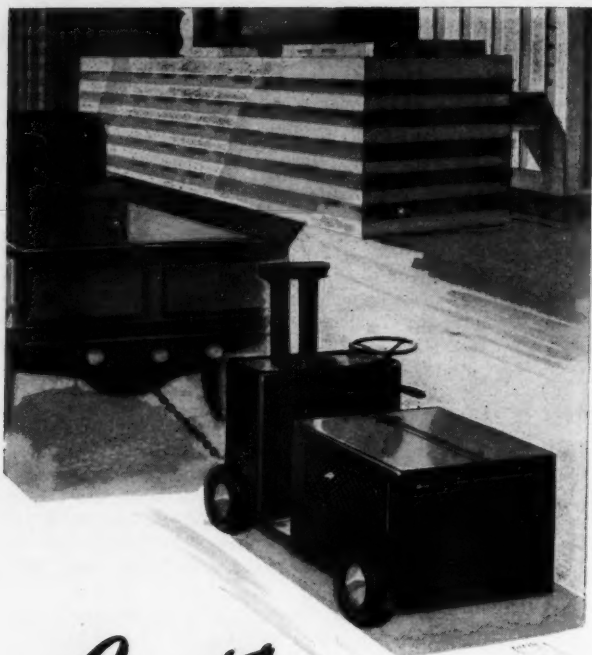
Foresees Globalized Merchandising Practices

"With cities on the Western Hemisphere at most 24-hours flying time apart, merchandising practices will have to be adapted to a world commerce that has been 'domesticated' or to a domestic commerce that has been 'globalized.'"

"This paralleled alignment of domestic and foreign trade policies of business concerns can be achieved by airplanes through reduction in time waste in transactions of trade among nations, members of the Export Managers Club of New York were told last month by George F. Bauer, International Traffic Analyst of Air Cargo, Inc., an organization sponsored by the air carriers to investigate subjects of special importance in the postwar period.

"The trade policies found effective in the United States for any given in-

(Continued on page 84)



*Caught
with Its
Battery Down!*

Long hauls or a hard day's work will often leave the battery of an electric truck run down. That's understandable. Inexcusable and unnecessary is the waste of precious manpower, material and time in "shipping" them back to a central charging station. They can be recharged *on the spot* by G-E battery-charging rectifiers placed at strategic locations so they're always on the job. Further, they are fully automatic, require no special training to operate. Just plug in and the charger does everything else.

Detailed data sent on request. Write to Section A735-111, Appliance and Merchandise Dept., General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC



HOW BIG can an Air Express shipment be?



AS TO WEIGHT, your shipment may be a pound or a ton and up, so long as it fits in a plane.
AS TO SIZE, you will be safe in following dimensions shown underneath the illustration.

However, large shipments can often be broken into a number of smaller units. When this is impossible, consult your local Railway Express Agency, who can often make special arrangements for handling larger shipments.

FOR FASTEST DELIVERY, ship early, as soon as package is ready. **PACK COMPACTLY** but securely, to cut **AIR EXPRESS** costs.

Maximum dimensions for AIR EXPRESS packages: Length, 35 to 49½ inches; width, 44 inches; depth, 18½ inches. Larger shipments should be broken into smaller units whenever possible to conserve valuable space.

Air Express Speeds War Program

TODAY, AIR EXPRESS not only serves the home front but is also working hand in hand with the Army and Navy to supply our fighting fronts throughout the world.

TOMORROW, AIR EXPRESS will girdle the globe in international peacetime commerce . . . to bring *all* foreign markets to the doorstep of American business.



Phone **RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION**
Representing the **AIRLINES** of the United States

WRITE for our quick-reference handbook on "How to Ship by AIR EXPRESS During Wartime." Dept. PR-2, Railway Express Agency, 230 Park Avenue, New York City.

Don't assume you can't get equipment—inquire.

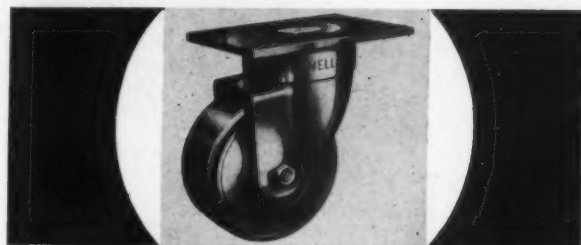
COOPERATION!

This is the spirit which makes America strong . . . this is the spirit that will help us win the War . . . this is the spirit that makes for the success of any enterprise.

Here in our own plant during recent months we have had the importance of the cooperative spirit brought home to us in an impressive way. For instance, without the cooperation of our whole community—citizens, employees, other manufacturers—we could never have "delivered the goods" that Uncle Sam wanted in a hurry. But with the cooperation of our community we succeeded in delivering 1510 cargo trailers to the War Department within a twelve-day period. And we are proud!

This spirit of cooperation is basic in America. It involves no compulsion. It is reflected in every community, in every project, in every organization, in every industry. It IS America.

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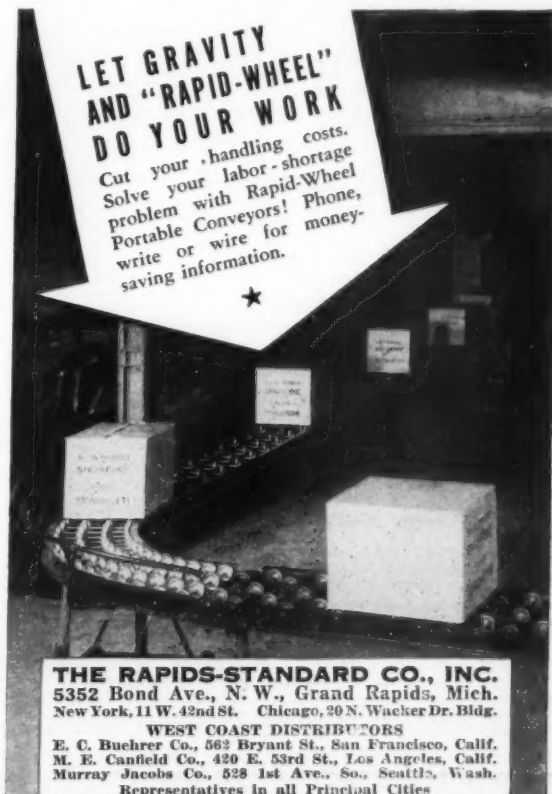
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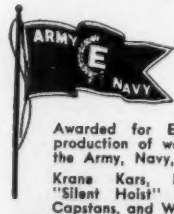
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46—D and W, July, 1943

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Cable Reel Dollies

Cable reel dollies are said to be unique in that they do away entirely with the need for blocks and jacks. "You simply roll the coil onto the dolly and start to pay out. This dolly is also used advantageously for rolls of leather belting, linoleum, etc.," the manufacturer states. Most all of the leading wire and cable companies are said to have adopted this modern dolly. For a considerable time the Metzgar Co., Grand Rapids, Mich., manufacturer, has been making this in one size only.

"The base of this junior dolly, the maker says, "is made up of a high grade of kiln-dried maple, firmly bolted. The two 6 in. diameter steel rollers are 36 in. long and operate with ball bearings on a 1 in. diameter axle. When the coil is in place you simply engage a pin in the front roller to make it rigid. The pin is attached by a chain to the side member of the base."

A larger dolly made by the Metzgar Co., is known as their senior dolly. It has the same construction with 60 in. rollers. In order to provide ample capacity for these larger reels, coils or rollers, the axle has been increased to 1 1/4 in. and a ball bearing affording additional strength is used.

Cargo Loader for Planes

Cargo planes are now rolling off assembly lines in ever increasing numbers. They are hauling unheard of tonnages, by air, to all parts of the world. Many of these points have new air fields, hewn out of the jungle, leveled off in the desert, or plowed out of the snow.

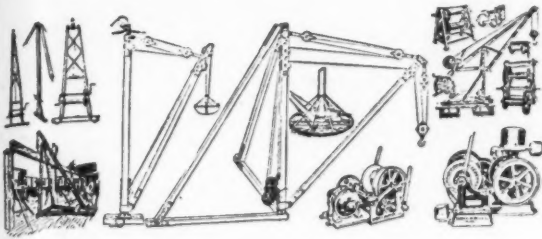
One of their problems is to load and unload the cargo planes under all conditions as they find them. The new Pioneer cargo loader, manufactured by the Pioneer Engineering Works, Minneapolis, Minn., has been designed to answer this problem.

The Pioneer cargo loader is mounted on a track type tractor, so it has good traction under any ground conditions. Furthermore, the tractor can be used for other work, such as moving planes, loading snow, bulldozing or towing freight.

When the load is down in carrying position—the highest point is under 7 ft., which will pass under the wing of any

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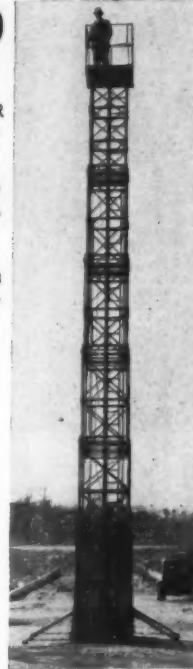
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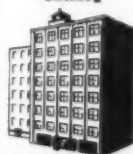
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of the cargo planes. Furthermore, the operator has a clear unobstructed view in all directions.

The Pioneer cargo loader, it is said, will pick up, from ground level, and load into a plane with a floor 10 ft. above ground level. For handling a quantity of packages a pallet or platform is available. The platform can be loaded with the freight for a scheduled flight. When the plane is ready the cargo loader picks up the platform with its load and sets it in the plane door for unloading and distribution in the plane.

The loader is operator by two hydraulic rams, taking power from the tractor. It is controlled by levers within easy reach of the tractor operator.

Floodlighting Projectors

To meet wartime needs for protective floodlighting and lighting of yards, areaways and other outdoor work places the Benjamin Electric Mfg. Co., Des Plaines, Ill., has made available its new type RDS floodlighting projectors.

These new models are said to have the same efficient silvered mirror crystal glass reflector and other mechanical features of the RD projector. Among these features are adjustability of the beam spread over the entire beam range from narrow

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Don't assume you can't get equipment—Inquire

ALL SET FOR THE WET

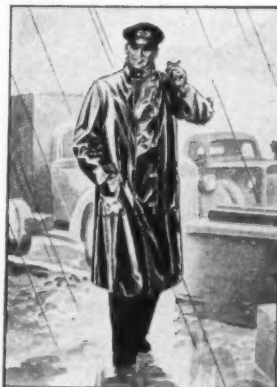


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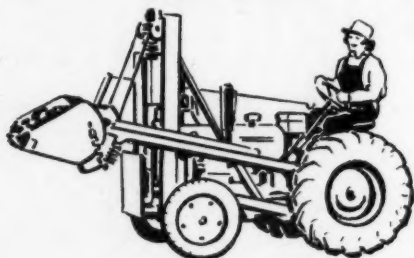
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22 MARSH BUILDING
BELLEVILLE, ILL., U. S. A.



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THIS Case-powered hydraulic loader scrapes up a giant-size shovelful of anything from snow to corrosive chemicals, carries it any desired distance, and dumps it into truck, conveyor, or stockpile. On short hauls it handles 250 to 300 cubic yards a day, with one operator and no hand work. Its controls are so simple and easy that operation by women is practical. Its mobility adapts it to scattered jobs. Ask your Case distributor for details. J. I. Case Co., Racine, Wis.

CASE
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to wide which makes it possible to fit the beam to the requirements of the installation; special focusing mechanism to permit placement of light exactly where needed without waste; easy installation; provisions to facilitate maintenance and lamp changes; quick acting, safety type cover clamps. Units are furnished with vertical and horizontal stops, which automatically reposition projector and eliminate need for re-setting after projector has been tilted or turned around for cleaning or inspection.

The new RDS units are furnished in two models. The RDS 14 for 300 watt and 500 watt general service lamps or 500 watt floodlighting lamps. The RDS 18 for 750 watt and 1000 watt general service lamps or 1000 watt floodlighting lamps. Each model is supplied with plain, stippled or ribbed, heat resisting glass covers.

Don't assume you can't get equipment—Inquire

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Steel Containers Available For High Pressure Gases

Steel containers for high pressure gases and liquids, designed and produced by Walter Kidde & Co., Belleville, N. J., have recently been made available for general use on lower priorities. Made of alloy steel, cylindrical in shape with round bottoms, necked and threaded to specifications, they are in full accordance with ICC regulations. New drawing methods and metallurgical treatment, it is said, give strength designed for working pressures up to 1800 lb. per sq. in. combined with unusually light weight. Weights of empty containers range from 1½ lb. for the 20 cu. in. size up to 21 lb. for the 646 cu. in. capacity. They crush without shattering, and can be supplied in special non-fragmenting forms.

These cylinders, it is said, are cut from sheet steel as discs which are drawn in successive steps until they reach required specifications. Surface treated and stress-relieved, they are rigidly inspected, it is stated, for all dimensional factors including size, weight, volume and physical strength.

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Fig. 202-4
A popular
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Truck

ORANGEVILLE MFG. CO.
Orangeville (Col. Co.), Pa.

TRUCKS, STEVEDORE

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Factories on the Move...



Bessemer, Ala.—Fruehauf Trailer Co., 10940 Harper St., Detroit, Mich., manufacturer motor trailers, parts, etc., has leased former factory of United States Heater Co., 8th Ave. and 25th St., here, consisting of large 1-story building and several auxiliary structures on 3-acre tract of land. Structures will be remodeled and improved, with installation of equipment for new branch assembling works. Proposed to carry out program at once.

Bessemer, Ala.—Reynolds Metals Co., Federal Reserve Bank Bldg., Richmond, Va., manufacturer aluminum, etc., reported planning acquisition of large industrial property here for new plant for extruded aluminum products manufacture for Government. It will comprise several large units, estimated to cost over \$10,000,000. Project will be financed by Defense Plant Corp., Washington, D. C., federal agency, when approved by WPB.

Alhambra, Cal.—Dingee Aircraft Products, Inc., recently organized by William W. Dingee, Jr., and associates, has leased 1-story industrial building at 3060 West Main St., and will equip and occupy for plant.

Burbank, Cal.—Adel Precision Products Corp., 10777 Vanowen St., North Hollywood, Cal., manufacturer aircraft equipment, fuel pumps, etc., has purchased industrial property here, comprising main 1-story building and auxiliary structures, and will remodel and equip for new branch works, to be known as Plant No. 3.

Los Angeles, Cal.—McDonald Mfg. Co., 544 E. 31st St., manufacturer molded plastic products, plans early erection of new 1-story plant, about 45 x 125 ft., at 559 East 32nd St., reported to cost over \$35,000, with equipment. George J. Fosdyke, 112 N. Main St., is engineer.

Los Angeles, Cal.—Rapco Machine & Tool Co., 1801 E. Slauson Ave., manufacturer oil-well drilling tools, etc., has completed plans for new 1-story machine shop, 36 x 100 ft., at 5742 Bardera St., and will begin work at once. Cost estimated close to \$25,000, with equipment.

San Francisco, Cal.—Marsh Flat Chrome Associates, Inc., 582 Market St., has plans under way for new chrome concentrating mill at mining properties in Tuolumne County, reported to cost about \$85,000, with machinery.

Bridgeport, Conn.—Sikorsky Division, United Aircraft Corp., Stratford, Conn., has purchased industrial property at Bridgeport, heretofore held by Crane Co., and will remodel and equip for new branch plant for production of aircraft of helicopter type. Project will be carried out at once.

Bridgeport, Conn.—Standard Column Co., manufacturer of iron building columns, etc., has purchased former local plant of Tait Paper Mills, Railroad Ave.,

comprising large 1-story mill and auxiliary structures on site 150 x 350 ft., and will remodel and improve for new factory. Present works will be removed to new location and additional equipment installed for increased capacity.

Wallingford, Conn.—Chandler-Evans Corp., Evansville Ave., South Meriden, Conn., manufacturer fuel pumps, carburetors, etc., has leased a 1-story industrial building on Parker St., here, and will equip for branch plant. A 1-story addition will be constructed.

Pelham, Ga.—Clark Thread Co., Austell, Ga., has acquired former plant of Consolidated Textile Corp., here, and will modernize and equip for new branch mill. Work will be carried out at once.

Chicago, Ill.—Lawrence N. Daleiden & Co., 29 N. Dearborn St., manufacturer church supplies, has purchased 6-story and basement building at 218-20 W. Madison St., and will use in part for expansion. Company has been occupying main floor of purchased building as wholesale and retail store, and will remove production branch of business, including plating works, from 663 Washington Blvd., to new location, using two floors of structure for this purpose and expanding present capacity.

Chicago, Ill.—Kurly Kate Corp., 216 N. Clinton St., manufacturer processed food products, has leased 4-story industrial building on local site at 2213-15 S. Michigan Ave., and will remodel and improve for plant. Present plant will be removed to new location when structure is ready for occupancy and additional equipment installed for larger output.

Chicago, Ill.—Reed Metal Crafts, 4035 W. Kinzie St., manufacturer metal goods, has approved plans for new 1-story plant on local site at 3532-36 N. Knox Ave., about 50 x 125 ft., estimated to cost close to \$50,000. Proposed to remove present works to new location when building is ready for occupancy, providing additional equipment for increased output.

Dike, Ia.—Farmers Cooperative Elevator, Clifford Gregory, manager, has plans maturing for new 1-story soy bean processing plant on local site, recently acquired. Cost estimated close to \$50,000. A priority rating has been secured and work is scheduled to be carried out at once.

Muscatine, Ia.—Muscatine Processing

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Co., recently organized, has taken over local plant of Puritan Ice Co., under lease, and will remodel and improve for new soy bean processing mill. Equipment will be installed for large capacity. S. G. Stein and G. A. Kert head new company.

Sioux City, Ia.—Ray-O-Vac, 2317 Winnebago St., Madison, Wis., manufacturer dry cells, radio batteries, etc., has leased 3 floors in Diamond-Simmons industrial building, here, and will improve and equip for new branch assembling plant.

Sioux City, Ia.—Sherman Food Processing Co. has plans maturing for new 1-story dehydrating plant on site recently acquired at 206-10 Iowa St. Cost estimated over \$200,000, with machinery. Work will begin soon.

Sioux City, Ia.—Sioux Soya Co., recently organized, has acquired local mill of Kerr Milling Co., Clark and 11th Sts., and will modernize and equip at once for new soy bean processing mill. Extensions will be made to existing buildings at early date, and additional machinery installed for increased capacity. Entire project reported to cost over \$150,000. Arthur Sanford is president of new company, and H. R. Scroggs, secretary and treasurer.

Boston, Mass.—Babson-Dow Mfg. Co., 60 Fulda St., manufacturer screw machine products, special machinery, etc., has purchased industrial property at Vale, Thornton and Fulda Sts., in vicinity of present plant, consisting of group of 3-story buildings, about 150,000 sq. ft. of floor space, and will modernize and equip for expansion.

Detroit, Mich.—Lauer Tool & Gage Co., 14265 Birchwood Ave., manufacturer tools, dies, gages, etc., will remodel and improve a 1-story factory on Freeland St., near Plymouth Rd., and occupy for expansion. Application has been made for a priority rating to carry out work.

Grand Rapids, Mich.—Grand Rapids Metalcraft Corp., Grand Rapids, manufacturer automotive and aircraft products, has purchased 1-story building at 520 Watson St., S.W., totaling 20,000 sq. ft. of floor space, previously owned by Consumers Power Co., and will remodel and equip for new plant for production of stabilizers for bombing planes for Government. Work will proceed immediately. Equipment will be installed for employment of about 250 persons. Company is a division of F. L. Jacobs Co., 1043 Spruce St., Detroit, Mich.

Minneapolis, Minn.—Franklin Transformer Mfg. Co., 607 22nd Ave., N.E., manufacturer transformers and other electrical equipment, has purchased 1-story industrial building on local site at 65 22nd Ave., N. E., and will improve and equip for expansion.

St. Paul, Minn.—A. O. Smith Corp., 3533 North 27th St., Milwaukee, Wis.,
(Continued on page 108)

BIRMINGHAM, ALA. 1880—Sixty-three Years of Service—1943**HARRIS TRANSFER & WAREHOUSE CO.**

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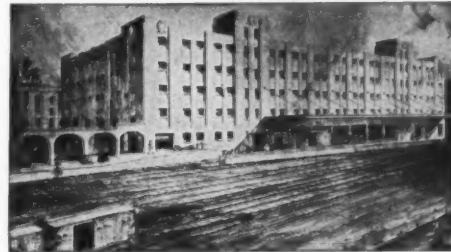
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Pool Car
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Compartments
for household
Goods**Airports
And Air Cargo**

(Continued from page 38)

design to insure efficient handling and transfer of shipments, the saving in air-transit time particularly on short-haul flights will be lost. It becomes apparent, therefore, that airports for handling air cargo should be located as near as possible to the business district of a city so as to be in close proximity to the terminals for other methods of transportation, and to cut down the distance and, consequently, the time required to render fast truck pick-up and delivery service for air shipments. This will require that all-ground handling equipment and methods be of the highest efficiency in order to provide for rapid loading and unloading between scheduled flights and the proper coordination of air and ground carriers.

It is important that air cargo terminals and their facilities be so designed and selected that any type of aircraft

can be berthed, unloaded, loaded and dispatched with uniform and equal efficiency and that any size or weight or class of cargo that might be offered by shippers be handled in a uniform manner with equal efficiency and with a common, flexible type of handling equipment.

Until proper airports and ground handling facilities are provided, the development of air cargo will be hampered. This is a problem that demands the interest of business men and local government officials as well as the airlines.

The present air carriers are more than anxious to make their services available to the public wherever and whenever they are needed, but they cannot do so without the wholehearted cooperation of the shipping public. In this respect the business interests of a community can provide much valuable information to local planning committees and the air carriers on which the present and future airport requirements best suited to meet the needs of the community may be based.

**Large Chicago Carrier
Asks Air Cargo Permit**

Keeshin Air Freight, Inc., has been organized as a subsidiary of Keeshin Motor Freight Lines, Inc., Chicago, and has applied to the Civil Aeronautics Board for a certificate of convenience and necessity to operate as "a common carrier for hire by aircraft in the transportation of property in interstate and foreign transportation."

The new air freight company is prepared to expend approximately \$2,000,000 on the enterprise and to set up the system immediately, John L. Keeshin, head of the concern, stated. Cargo planes with pay load capacities of five to 11 tons will be used in a fast pickup and delivery service integrated with the company's existing motor facilities. More than 200 major cities will be served through an exchange of freight from truck to plane at 18 terminals, it is said, while service also will be extended to foreign points.

Pooling of Barges Asked in San Francisco

Creation of a barge pool in the San Francisco bay region is being recommended by Belford Brown, who heads the sub-committee on barges of the Bay Area Maritime Committee. The committee has recommended the pool idea to the proper Government agencies as a means of facilitating loading of ships in the bay and making better utilization of manpower. Brown says that the barge loading would make possible fuller utilization of some of the smaller ports around the Bay, also, naming Antioch, Sausalito and the upper bay and the delta region, thus speeding up wartime operations from this section.

Retiring Harbor Commissioner Joseph F. Marias, who has long advocated the use of barges in this bay in the loading and discharging of ships, says that one obstacle to barge use has been union regulations directed at the direct loading of ships. These regulations have been lifted. Formerly, barge cargo was transferred to the pier, thence to the ship. It is estimated that at least 3,000 manhours were wasted annually by this indirect method of loading. Marias says enough barges and flat boats are already available to effect a saving of 190 miles on every freight car in transferring cargoes from freight cars to water carriers in Sacramento and Stockton alone. (Gidlow)

Denver Warehouse Wins Army-Navy "E" Award

The Army-Navy "E" award for outstanding war work was conferred upon the Weicker Transfer & Storage Co., Denver, Colo., during May. The company has played an important role in construction of hulls for destroyer escort vessels which combat the submarine menace in the Atlantic. The firm stores and prepares the steel for fabrication upon shipment to Denver and transports it to the Denver inland shipyards. (Alexander)

Editor's Note: As stated editorially in the May issue of D and W, p. 5, we believe many warehouses are just as much entitled to ratings of excellence for war work as are industrial plants. A large number of warehouses are performing extraordinary and indispensable public service. Without them the movement of war materials from factories to ports could not be handled. The Denver warehouse cited above evidently received its award for its connection with the shipbuilding program rather than for its freight warehousing activities.

We repeat: As a matter of equity, public warehouses active in war work are entitled to and should receive Army-Navy E pennants in recognition of outstanding services rendered in furthering the war production of the nation. As ODT Director Eastman has stated, without the services rendered by public warehouses "the whole transportation system would become clogged."

Predicts Rapid Expansion Of Post-War Television

Rapid expansion of existing television facilities and the development of television networks to make programs available over wide areas in the post-war period were predicted recently by David Grimes, vice president in charge of engineering for the Philco Corp., in an address before the New York Institute of Finance.

"Much of the research and engineering now being carried on at an unprecedented speed to meet emergency war needs will advance and improve the television art in the post-war period," Mr. Grimes said. "The next big job that will be tackled as soon as technicians and materials are available at the end of the war will be to develop radio links so that television programs can be 'beamed' through the air from city to city."

There is every reason to believe that television, which is already as far advanced as radio broadcasting was in 1927, Mr. Grimes added, will become one of the great industries of the post-war period.

● The Johns Manville, home insulation division, has leased the former plant of the McShane Bell Foundry Co., Hartford Rd. and Baltimore & Ohio Railroad, which it will use for its business. (Ignace)

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VALVES . . .

Since present materials do not have as high heat resisting properties as before the war, a lean mixture should be avoided at all costs.
For other suggestions on war-time replacement parts, see page 47.

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Airline Public Relations Examined by Dr. Frederick

AIRLINE PUBLIC RELATIONS ACTIVITIES. By John H. Frederick, Professor of Transportation, and Geneva Rooth, Research Assistant in Transportation, School of Business Administration, The University of Texas. Published by the Authors, Austin, Texas. (\$1)

"Probably no other service or product ever offered the public had to be so perfect, so safe, and so reliable as did the transportation services of the airlines before public acceptance could be expected," Dr. Frederick declares in the introduction to his interesting and informative booklet on the public relations activities of American airlines. It is a comprehensive study of the attitude of airline executives during the first 10 or 12 years of air passenger transportation in the United States, the reasons for their change of attitude in later years, and of public response to airline advertising and general publicity.

"From a sales standpoint," Dr. Frederick says, "no one envisages a saturation point for air transportation. As people think in terms of air travel, they will continually find newer and different uses for it and more ways to benefit from it. When automobiles were invented, they did not simply move people out of horse-drawn buggies and take that same number of people on the same trips they would have taken in buggies. Automobiles

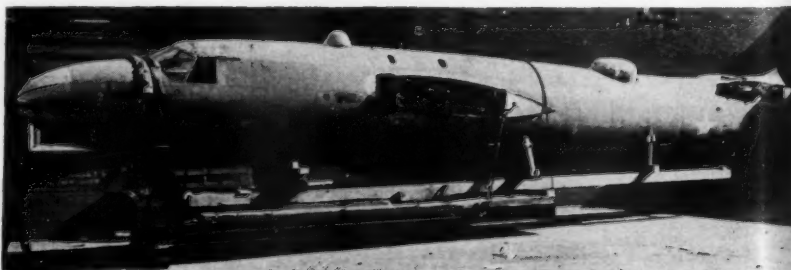
greatly expanded, multiplied, and diversified travel because they made possible the use of transportation in many more and different ways. More ways for people to use air transportation advantageously is the ultimate measure of the market for the product of the airlines. . . .

"Despite the stimulation of public interest in air transportation engendered by the war the public is still generally ignorant of the development of commercial air transportation as a whole and of its

future potentialities," Dr. Frederick believes. "Heretofore not enough has been done to interpret the airline industry to the public in the language of people's thoughts, habits and personal interests. This is the job of public relations men and women."

In addition to his examination of airline public relations work, the author examines the Civil Aeronautics Board and its policies which affect airline public relations. The booklet also contains a valuable bibliography on the subject.

6 TONS OF FUSELAGE



. . . The Army Air Force is operating a ground force training school at Yale University. One of the principal courses is repairing and assembling planes. The photo above is of a bomber fuselage that weighs about 6 tons. The Smedley Co., New Haven, Conn., which did the moving had to handle it in sections. It looks the worse for wear and tear, but that is the type of plane the training school likes to get as it requires a variety of real repair jobs.

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

(Continued from page 47)

controlling engine over-run.

CAMSHAFTS—Previously used materials and methods of heat treatment have not been changed.

RUBBER HOSES—To date rubber hoses from reclaimed rubber have not been satisfactory. With more rapid breakdown, frequent inspection is called for.

WATER PUMPS—Wherever possible, zinc or chrome plated parts have been substituted for brass. The carbon steel Parkerized tubing used in place of brass is not generally satisfactory and an emergency measure only.

ENGINE GASKETS—Soft carbon steel has been substituted for soft copper and these gaskets do not have the compatibility of copper. Check testing with torque wrenches on the cylinders is advisable.

FAN BELTS—Mileage of reclaimed rubber belts not up to that of former belts. More frequent inspection for wear and tension needed.

ENGINE THERMOSTATS—No radical substitutions have been made.

CARBURETORS—Many changes have been made, mainly the substitution of protective coated steel parts for brass. Generally speaking, no coated part can

be guaranteed as minute parts of the surface may remain uncoated—areas too small for the naked eye. All gasoline lines have been changed over to steel tubing copper plated on the inside. More difficult to handle and repair steel tubing in the field.

IGNITION—The change from copper to stainless steel has not been too satisfactory from a mechanical standpoint. Because of the hard surface of stainless steel, special care is necessary to see that fittings are firmly attached. Generators and starting motors are to all intents and purposes unchanged. In general, satisfactory service may be expected.

RADIATORS—In some cases it has been found practical and possible to substitute steel for copper fins in the radiator, retaining, however, the original copper tubes and brass tanks. The number of fins per inch has been greatly increased, increasing the possibility of becoming clogged. More careful examination for corrosion necessary.

CLUTCHES—Where natural rubber compounds have been used in the past in linings, molded linings are now being furnished without any rubber fillers or binders. Generally satisfactory if the

driver understands the necessity of care.

TRANSMISSIONS—Extensive application of emergency steels. Lack of experience in heat treatment may mean much shorter life. Good oil and increased care in shifting from one speed to another are essential.

AXLES—Use of national emergency steels most significant in rear axles. Time alone will tell the story. Good lubricants and driver care in starting and stopping will influence results.

BATTERIES—Good batteries can be secured with composition cases and wooden separators. Results favorable if properly maintained.

STEERING—No sacrifice of reliability from a strength standpoint has been made in steering gears but, because of the use of emergency steels, the wear life will possibly be less. More frequent inspections recommended. Plastic material has been substituted for rubber in the steering wheels with good results.

VACUUM POWER BRAKES—The general brake picture is good. Brake drums still made to high tensile limits. Braking parts in general are heavier as cast iron has replaced aluminum and zinc.

Air brakes retain their original dependability, with little or no change.

LAMPS—Reflectors now made of steel instead of brass.

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pendability no longer obtainable and short life is expected.

The overall picture shows that we are probably better off in the transportation field than other countries. However, we should pay more attention to load and speed than ever before, and drivers will play an important part in maintaining the efficiency of vehicles.

As brought out by Mr. Cass, it must be remembered that overloads wear bearings out of all proportion to the extra weight. For instance, a 20 per cent overload will reduce the life of bearings nearly 50 per cent. By the same token, underloading will increase the life out of all proportion to the weight taken off. Speed has the same disproportionate effect on wear as does the load. Consequently it should be closely regulated. Load and speed determine, to a large extent, the life of tires.

Proper inspection and maintenance steps are more necessary today than ever before. Even though present operating schedules may make it difficult, everything possible should be done to conserve materials, remembering that materials are of paramount importance today.

Today, as Mr. Cass brought out, drivers must be more than drivers. The contribution they can make to wartime transportation and the conservation of our truck resources is great. A tentative set of rules for their strict adherence might be as follows:

"1. When starting cold, the engine should be warmed up slowly. This will allow the oil to reach a good operating temperature and prevent scuffing of pistons. In this connection extreme care should be exercised in the use of the choke.

"2. A very careful check should be kept on the engine temperature and, when necessary, shutters or covers should be used to keep normal temperatures.

"3. The engine speed must be held to a minimum at all times.

"4. Reasonable acceleration is vital. Rapid acceleration definitely should be ruled out. Coasting of hills at high speeds, using the engine, should not be permitted. Under no circumstances should the driver run in low gear for any great distance.

"Such precautions as these should increase the life of pistons, cylinders, and bearings as much as 20 per cent, and all this is directly under the control of the driver.

"Truck operators should make a careful study to arrange operations so as not to exceed recommended engineering ratings except as absolutely necessary. Schedules should be rearranged so that engine speed can be held at least 10 per cent lower than at present. And finally, the driver's part in the conservation program should be emphasized. All this is in addition to the maintenance steps which should be taken.

"With the available motor equipment getting older every day, it requires more maintenance and not less. Unless the owners of motor transport equipment—through their own service facilities and the service facilities made available by the manufacturers of equipment—greatly improve their maintenance methods, there will be a serious reduction in the transport equipment that will be available to handle the constantly increasing tonnage requirements that the truck is being asked to transport.

"It is a real challenge to both the operator and the manufacturer to build and develop organization, buildings, and methods that will make certain that every motor truck that is running today will be kept running for the duration and will be maintained at a standard of efficiency that will decrease the rate of wear on replacement parts just as much as possible."

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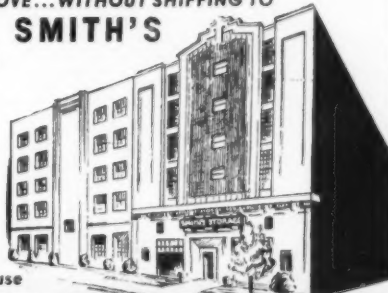
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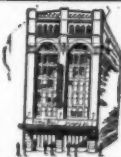
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Insurance Rate 12 Cents

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Members A.W.A.—A.C.-of-W.—J.W.A.



HANDLING EQUIPMENT MANUAL

(Continued from page 34)

the possibility of its moving when loading or unloading. Means are also provided for supporting the loaded platform in any position should the operator or power cease for any reason to furnish lifting force.

Application — Tiering machines may be used for piling cases, bales, barrels, etc.; unloading trucks; overcoming dif-

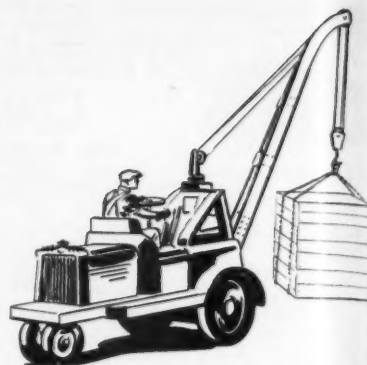
ferences in floor levels; elevating machinery for erecting or repair purposes; elevating liquids to permit siphoning or pouring; elevating materials into storage for hand stacking, for rack storage or for elevating to platforms or balconies, or between floors. The last application is a direct substitute for the freight elevator and is used when a fixed elevator would not be justified.

Swinging Boom Industrial Crane

Definition—Swinging boom industrial cranes are those mounted on power-propelled chassis, where the swinging of the boom is accomplished independently of the steering of the tractor or motor power unit on which it is mounted.

Description—This type of crane has been developed for use on standard tractor units, with the boom mounted on pedestals above the power unit, and counterbalanced with weights so that it can swing at various degrees up to 360 deg. In other cases the boom is mounted over the drive wheels which are at the front of the unit and attached to a vertical mast, arranged so that it can swing up to 300 deg. On these units suitable counterweights are provided on the side of the tractor unit. These cranes also are able to be topped while the load is suspended from the hook. The boom can swing with the load suspended from the hook, and the whole unit can move with the load in suspension.

Application—This type of crane was



Swinging Boom Industrial Crane

developed for industrial plant use, but can also be used on piers, docks, railroad yards, warehouses, freight terminals, etc. It provides a flexible, portable crane unit able to operate under its own power, for the lifting, swinging and transporting of the load.

Wharf Crane

Definition — A crane located on and generally a part of the wharf or pier structure, and particularly adapted to the transfer of cargo between the wharf or pier and the hold of the vessel alongside.

Description—There are several types of wharf cranes, such as the single or double portable gantrys, or travelling bridges, which operate on the wharf shed roof, sometimes carrying auxiliary cranes



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such as rotating pillar cranes; and also the type of cantilever gantry with folding extensions for projecting over the hatchway, as well as gantrys with inclined cantilever jibs. These cranes may travel on tracks laid on the wharf or pier, or on an elevated runway secured to the side or on the roof of the pier shed, or inside of the shed. In some cases, they are stationary, but more frequently are of the portable or semi-portable type. Only the lighter capacity wharf cranes are hand-operated, the majority of these cranes being power-

hoist to raise the load from the bottom of the hold to a point entirely clear of the vessel; and speed and economy of operation.

Application—The nomenclature of this equipment is based on its application, as wharf cranes are used primarily on wharves, for loading and unloading cargo vessels, although they are sometimes used inside of the pier shed for handling cargo and doing it without the aid of auxiliary machinery. Wharf cranes are also adaptable to industrial handling operations, such as at shipyards, but if this type of crane was used in an industrial plant, it would not be called a "wharf crane." Wharf cranes can also be used for transferring cargo from the hold of the ship directly into cars or trucks, or to tractor trailer trains operating on the wharf apron.

Shorter Fuel Trains Urged Within City Limits

Protests that railroads run shorter trains (40-car trains suggested) of fuel tank cars when hauling them within city limits was voiced in Pittsburgh by Safety Director George E. A. Fairley after an oil train of 84 cars being hauled east through the Northside district by two engines was wrecked. First three oil cars of the train, besides the head engine and coal tender, overturned. (Leffingwell)

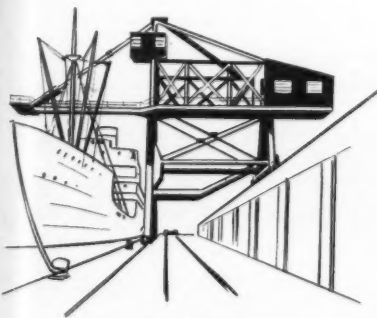
Air Questionnaire Sent Out By CAB

The Civil Aeronautics Board announced recently that it is consulting with qualified persons and groups in American aviation in regard to the Government's study of long-range problems in international air transportation. This consultation has been through the submission of a series of questions covering certain of the matters which the Board believes must be determined before any sound international air transportation policy can be formulated. The Board said the questions were prepared and circulated after conferring with the Interdepartmental Committee on International Aviation. Military aspects of aviation, are, of course, not included in the scope of this study.

Re Prices . . .

"Regularly established prices," as the term is used in Priorities Regulation No. 1, cannot be regarded as higher than the ceiling prices established by the Office of Price Administration, according to a ruling announced recently by the War Production Board.

This interpretation of Regulation No. 1 means that a manufacturer or other vendor may not reject an order bearing a preference rating on the ground that the price offered is below the regularly established price, if the purchaser meets the OPA ceiling.



Wharf Crane

operated and power-propelled. Owing to the variation in length of vessels and spacing of the vessel hatchways, this type of crane should be capable of movement along the wharf. Other requirements are: sufficient horizontal reach to cover the hatchway, sufficient length of

Warehouse Safety Problems

(Continued from page 56)

A certain minimum of orderly systematic procedure, involving programs, committees, inspections, and investigations and analysis is advisable, but this procedure should be purposeful and should not be relied on to achieve results unless it is recognized, not as prevention itself, but merely as the medium or machinery whereby prevention is achieved.

Accident prevention is the work of finding and then eliminating or correcting the personal and mechanical hazards that will, in all probability, cause future accidents. Obviously, the more important personal and mechanical hazards should be selected for first attention. This requires the services of trained safety engineers.

Accident prevention is easy and simple. It should be an inherent part of business management, and should be recognized and treated as such by top executives, on a par with sales, production, accounting and other phases of business. The methods of controlling accident occurrence are identical with those used in controlling production quality and volume.

In the way of illustration, I would like to describe a few typical warehouse accidents, showing how closely affiliated

are the matters of management and supervision, planning, efficiency and economy, safe practice, and accident prevention.

Case 1: 90 lb. sacks of coffee beans were cross piled, 20 high, under poor light conditions and with no corner aisle guards or aisle markers. Rear control fork-truck operators ripped down sacks when turning corners and material ran out allowing corner pile to collapse. One man was crushed and died. Situation had existed for weeks.

Case 2: Case goods were poorly loaded on single-face pallet. Pallet was too large for load and cases were stacked overlapping one end, leaving other end bare. Truck operator could not see empty end of pallet. He ran the forks under pallet as usual, then tilted back to raise load. No guard rack was installed on truck above the forks and top cases slid over on him. Result: fractured skull.

Case 3: Carboys of heavy acid were received, properly cased. However, the necks of the bottles stuck out of the tops of the cases. In stacking, the method used was to stagger and space the cases so that the carboy necks would stick up in the staggered spaces. Finally, one

case was accidentally shoved into a bottle neck, there was a shower of acid and a fatal burn resulted. Good warehousing would have required the use of proper pallets, dunnage or frames or collars high enough so that side movement of cases would not strike the necks of the carboys.

Case 4: Barrels of flour were stacked in two high tiers, with pallets under each tier but with no dunnage between the two barrels in each pallet load. This required exact vertical matching of the barrel ends in order to get stability. Had been practice for two years. Finally a fall occurred when taking down upper tier pallet. Fractured pelvis and permanent impairment.

In all of these cases, safe as well as efficient warehousing methods are involved. When one is taken care of properly the other naturally follows. In many cases, employees: back without looking; cut corners; get improper grip; stand under loads; run, fool and horseplay; lift while in awkward position; jump on and off elevators and moving vehicles; ride loads; fail to report injuries; fail to wear gloves or other safety devices; remove guards; throw debris in aisles, and do countless other unsafe things. These are all readily observed and just as readily corrected, when they are known, as are violations of procedure that damage material or interfere with regular business procedures.



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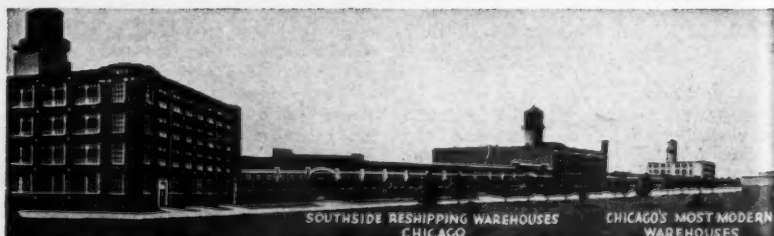
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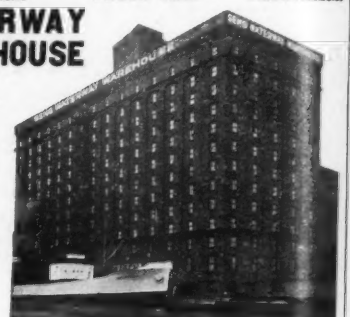
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BUYS PLANT

The old Aultman-Taylor Co. plant in Mansfield, O., has been sold to A. J. Burkhart, local lumber dealer, who announced he will spend \$200,000 on the property to develop it into a modern warehouse and trucking terminal. Abandoned as a manufacturing site in 1923 when the Aultman-Taylor Co. quit business there, the plant has been used since then as a warehouse. It includes nine buildings and five acres of land. Burkhart acquired it from the Harter Realty Co., Canton, O., for a reported \$80,000. (Kline.)

Forsees 'Globalized' Merchandising

(Continued from page 63)

dustry may be readily extended to world regions," Mr. Bauer said. "Time separations will no longer be hindrances. Methods, which have proved satisfactory in other countries, will hardly be viewed as foreign but rather as worthy of application here, too.

"Contacts between distant peoples will be as quick as they were among citizens in the States in our Union alone a short time ago. Business, Mr. Bauer said, "cannot avoid adapting itself to this change that time economy of the airplane will bring about. Cooperation between domestic and export executives will become prerequisite. Only through recognition of their mutual interests will they be able to prepare for this one world trade.

"Indirect benefits of time saving, likely to be four-fifths of normal requirements in world trade, will favorably affect the following:

"1. Cost of a product, if perishable, or if subject to depreciation and obsolescence. 2. Cost of production, if volume of business, expressed in turnover can be increased by airplane time saving to accord additional economies in different departments and more profit for the producer. 3. Cost of shipping, if packing can be lightened with resultant economies in air transport

charges, which is based on weight, and handling, carting, reshipments, insurance and warehousing expenditures reduced. 4. Cost to dealer, if able to do larger amount of business without increase in capital requirements and existing facilities as a result of time economy applied to stocks afloat and on hand.

"Analysis of these components of a business will show the indirect benefits of time economy. From their total can be deducted the direct cost of air transport for a particular shipment at rates that in postwar period may be appraised in the neighborhood of 15 to 20c. a ton-mile although the actual rate cannot be fixed until results of numerous developments have been calculated.

"Under this procedure, "Mr. Bauer concluded, "it will be found, as with air travel, that indirect savings with air cargo due to time economy may readily offset in the postwar period any higher cost of air transport as a separate item."

● Helwig & Leitch, 101 North Haven St., Baltimore, Md., food products producer, has opened a branch plant at 725-741 North Castle St., which will be used for manufacturing varied lines of food products. This is in addition to its plant at North Haven St. (Ignace)

Frozen Foods in Bulk Placed Under Rationing

Industrial container sizes of frozen fruits and vegetables, over 10 lb., which have been "ration free" have been brought under control of the processed foods rationing program as the result of a recent order issued by OPA. Frozen foods in containers of 10 lb. or less are already under rationing.

Ranging in capacity from over 10 lb. to about 500 lb., the large containers are used by "industrial users" in the manufacture of confections, preserves, baked goods, flavoring extracts, ice cream and other products, and, on a more limited scale, by large hotels, restaurants and similar "institutional users."

By placing bulk sizes under ration control, OPA is moving to protect industrial user supplies against diversion into other channels. A tendency in that direction has been in evidence recently. Former users of small container sizes have been buying the large unrationed sizes, thereby disrupting the normal trade pattern of frozen foods distribution.

In addition, government estimates agree that the civilian supply of frozen foods will be materially reduced this year, thereby strengthening the government's conviction that rationing of bulk containers as well as of small containers is necessary to insure fair sharing of the available supply among civilians.

SEES VAST POST-WAR EXPANSION OF ALL HIGHWAY TRANSPORTATION

Harvey C. Fruehauf, president, Fruehauf Trailer Co., told stockholders of his company at their annual meeting that, following the war, opportunities for business and production, "will be bigger than ever before in our history."

Fruehauf reported that, "the company's business is concerned to a large extent with vehicles designed for the war effort. As a result, while sales have reached record figures for 1942 profits were below those for 1941."

Commenting on the post-war outlook, Mr. Fruehauf said, "The country will emerge from the war with a pent-up demand for manufactured products so great that the opportunities for business and production will be bigger than ever before in our history. In addition, it is to be anticipated that a tremendous era of public works—including roads, bridges, buildings—will lie before us not only in our own country but throughout the world."

"The demands that this post-war era will place upon transportation challenge the imagination. It is stating the case very mildly to anticipate a transportation development far beyond our present conception. The creation of adequate

highways will parallel the development of more adequate airports because there is need for definite coordination between air and land transportation.

"The trend toward the decentralization of industry, which even during war time is gaining momentum, will be accelerated even further by peace. Not only will improved highway transportation speed this trend but because of it, both highway and air transportation will have to develop to keep pace. The geographic spreading of our industries will alleviate many of the difficulties, due to poor living conditions and often poor working conditions, which have developed in highly concentrated population centers.

"The recognition accorded to the need for adequate highway transportation during this war period will help to overcome many of the antagonistic influences which were formerly directed against it. Because of the fact that the general public has finally become aware of the great contribution of this industry, it is doubtful whether public opinion will countenance a return to the pre-war restriction which threatened to throttle the growth of highway transportation."

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WAR HYSTERIA . . . and its effects

can be serious. See page 46.

TRUCKS HAULED 9,000,000 TONS OF LIVE STOCK FOR RECORD IN '42

Motor trucks set a new record in 1942 for the total tonnage and number of head of livestock hauled to market over the nation's highways. Total tonnage of 9,250,850 represented a gain of 866,190 over 1941, while the 48,734,505 animals transported by truck was a gain of 4,698,665 over the previous year. The movement was handled in an estimated 3,144,161 truck loads, a volume which would have required 830,000 railroad carloads had trucks not been used.

Chicago led the nation in tonnage and total number of stock arriving by truck, the figures being 4,360,889 head, weighing 942,407 tons, or a gain of nine per cent over 1941. The figures, based on Department of Agriculture reports, covered 68 principal livestock markets and do not include small packing plants at country points where practically all receipts are trucked in; nor is the movement by truck from farm to railroad siding for rail delivery to market included. Commenting on the figures, the Corn Belt Farm Dailies, a group of agricultural publications said, editorially, "Convenience, economy and speed of the motor truck, coupled with good roads and the opportunity to take advantage of favorable price swings at the markets, contributed

to the popular use of truck transportation. . . . The movement of nearly 50 mil-

"IMPOSSIBLE" LOAD



. . . Twenty-five of these giant fuel tanks had to be moved recently from Santa Maria, Cal. Many felt that this was a job that just couldn't be done by motor truck, but Smith Transportation Co. took on the job with heavy-duty Fruehauf six-wheel trailer equipment and performed the so-called miracle without difficulty.

lion head of stock by truck in 12 months is evidence of this popularity." (Lawson)

Los Angeles ODT Director Wins Praise of SAE

The Society of Automotive Engineers, Southern California Chapter, at a recent meeting adopted a resolution complimenting Ray Long, director of the Los Angeles ODT district office, for his efficient handling of problems pertaining to wartime trucking in the area under his jurisdiction.

The resolution stated Mr. Long had carried out the administrative orders emanating from Washington in regard to motor transportation with consideration, fairness and justice, and that his administration of the ODT bureau has resulted in definite and far-reaching efficiencies in the field of automotive transportation engineering and maintenance engineering.

A copy of the resolution was ordered framed and presented to Mr. Long and a photostatic copy sent to Joseph B. Eastman, director-general of ODT in Washington.

Mr. Long has been head of the Los Angeles ODT bureau since April, 1942. He was vice-president of Valley Express Co., Fresno, Calif., at the time he entered the government's service.

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LETTERS ON TRUCK-TRAILER SITUATION

(Continued from page 46)

about half as fast as formerly.—Ady & Milburn, Inc.

The increased demand for highway transportation especially in the last few months has made it more difficult to secure highway trucks and trailers. I believe everyone who uses trucks to any extent is affected. Some truck lines are going out of business in certain sections which only adds to the difficulty. Other truck lines embargo l.t.l. and only want truck loads. The fact is that there are not enough trucks and trailers to handle the highway freight offered.

In my opinion the only remedy is more trucks, trailers and repair parts to keep these trucks on the road and give the service intended by highway transportation.—H. M. Zook, T.M., Birdsboro Steel Foundry & Machine Co.

We use trucks exclusively to New York City, Newark, Philadelphia, etc. Only today we placed an order with a trans-

portation company for two trucks, but they were unable to furnish us with the necessary equipment. They gave as an excuse that they had seven units tied up in the garage for lack of replacement parts.

We manufacture iron and steel, and, of course, are on a 100 per cent war basis. Our experience has been that the rail service, on account of congestion, is very poor at the present time; and we believe that it is essential that the trucks be kept running and that some priority arrangement should be made whereby they can secure necessary replacement equipment.—O. T. Fagan, T.M., G. F. Wright Steel & Wire Co.

The great bottle neck seems to be shortage of equipment and manpower, but now since the railroads have suspended the 6 per cent rate increase, and trucking industries continue their higher rates, the situation may automatically be relieved somewhat, as apparently con-

siderable of short haul traffic will revert to the rail carriers.—G. D. Eddy, T.M., The Welch Grape Juice Co.

We are assured the rubber situation six months hence will be much brighter. What the gas and oil situation will be is an enigma. Items such as replacement parts, batteries, lights, ignition systems, etc., must be provided as a means of prolonging the life of the present equipment which will lessen the demand for new equipment.—E. G. Stewart, T.M., Lukens Steel Co.

Here are some of the factors which may lead to serious dislocation in the motor carrier industry in the New York metropolitan area: (a) lack of manpower; (b) shortages in replacement parts as well as gas and other supplies; (c) lack of cooperation from the shippers on account of not receiving freight at lunch hours, not receiving freight on Saturdays and not receiving freight after certain hours in the afternoon, bringing about a back-up of freight at truck terminals.

All this will cause a further decline of service for the small shipper or the less truck load shipper because of the

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fact that little by little they are being squeezed out of the picture.

The carriers do not have enough help nor the time to make pick-ups of small amounts of merchandise and are being forced to carry truck loads only for the large accounts. It is an unfair discrimination without doubt, but an analysis of the situation as it stands at the present time shows that there is little else that these motor carriers can do unless better cooperation is received from shippers and receivers of freight, as well as representatives of the armed forces.

Therefore it is to our best advantage to cooperate with the motor carriers by receiving freight whenever possible, instead of at certain hours only: to unload freight quickly, to load freight quickly and to do everything within our power to hold service with the carriers with whom we are doing business and make no unnecessary demands upon them. By so doing, we will be able to keep our products moving as quickly and as speedily as it is possible under today's conditions.—Milton Goldstein, T.M., Serutan Co.

time than usual. We most certainly hope that transportation system will be maintained and kept in private ownership hands. We, as one manufacturer, are doing our utmost to bear along with transportation companies under these trying conditions.—C. W. Hendrix, T.M., Rowe Manufacturing Co.

"Chiseling"

We are vitally interested in the matter of highway transportation. It has been the writer's observation that the truck people generally are engaging in "chiseling." They are refusing to handle low rated commodities even though they have not embargoed such commodity. The simple device of not giving service or pick up is used and the shipper, usually in disgust, is forced to divert the tonnage to rail. The writer has known instances where franchise carriers have flown the V pennant entitling the trucker to exceed the legal speed limits. Investigation developed the trucks were not loaded but were merely returning empty to their terminals.

All in all the nation urgently needs the flexibility that the motor carriers are capable of giving and it is the writer's sincere opinion that more equipment, such as new trucks and replacement parts should be made available to insure that there will be no break-down of highway transportation.—W. B. Beasley, T. M., Rose's 5-10-25c Stores, Inc.

Buffalo, New York, is considered in fifth place with respect to National Defense Production. Consequently there is much trucking done to and from this city. The writer's observations are based on contacts with a large number of trucking companies as well as being president of the Niagara Frontier Industrial Traffic League, an active organization of approximately 150 industrial traffic managers.

First: contract carriers who formerly operated a steady run between Buffalo and western cities, particularly Chicago, have discontinued serving their accounts here. One company in particular, the Safeway Transportation Co., Chicago, advised that this was necessary because of shortage of equipment, repairs, and especially shortage of drivers who have been called into the service.

Second: any number of common carriers are operating, some as low as 50 per cent of their former complement. This has restricted these carriers, in many cases, to truckload freight only.

Third: pickup and delivery service is beginning to suffer because of breakdowns and the inability to obtain necessary repairs. There is a decided shortage of parts plus the inability of service agencies to keep sufficient mechanics, causing a delay of days and in some instances weeks, in the repair on a single unit.

The exemption of drivers and mechanics from military service, and the freezing of this trade to their particular employment. A larger allocation by the War Production Board for necessary

We use trucking service to practically all points in the United States, and especially do we use this service to our Illinois points, on account of the service we can get from trucks which is much better than rail service. Although we realize the congestion of freight by all transportation companies, truck service has diminished 60 to 80 per cent on time delivery. However, rail service in most cases requires 100 per cent longer

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

D and W, July, 1943—89

parts and replacement of equipment—Orlo D. Wheaton, T.M., Wildroot Co., Inc.

It has been our experience that the transportation systems of the country are either insufficient or overworked. From time to time we have had considerable difficulty in obtaining trucking facilities, and many times our products which are essential to the war effort have lain on the highway for two or three weeks due to break downs traceable to worn out equipment. Perhaps the solution might be to permit trucking companies that are not now overburdened to take in additional territories.—F. L. Moser, T.M., Quaker Chemical Products Corp.

We can truthfully say that our operations, to a great degree, have been affected by the curtailed operation of trucks, especially interstate carriers to whom we gave a considerable amount of our business in the past in moving merchandise from Key Warehouses to jobbers and distributors in the smaller areas. This has affected us so much that we have had to work out an entirely different system from the one we used in the past when we specified the type truck to be used, the trucking company to be utilized, etc.

With further regard to interstate trucks, as you know we have always been obliged to use insulated equipment in which a reasonably low temperature could be maintained with dry ice. While we were operating under normal conditions with the right type of personnel as

Confident . . .

Most of the truck lines are operated by very resourceful owners and I look forward hopefully to their ability to keep them rolling.

The very first matter at hand is the winning of this war. Everything individually and collectively should be sacrificed and brushed aside to accomplish this purpose.

If the traffic which the trucks are hauling today is wearing down their equipment, then the traffic must be sacrificed.

All non-essential traffic should be removed and only sufficient trucks built to carry the necessary war traffic.—B. C. Hart, T.M., the Tropical Paint & Oil Co.

drivers, we had little or no trouble in affecting delivery of our commodity without defrosting. However, since ODT regulations have been in effect we have found a number of reliable companies withdrawing from the field, insofar as handling our type of commodity is concerned. This is presumably caused by the man-power situation as well as difficulty in securing replacement of parts, tire and gasoline rationing.—A. E. Huff, Mgr., Whsing. & Trans., Frosted Foods Sales Corp.

In our opinion, one of the surest, simplest, least expensive and most equitable means of smoothing out what may become a bad transportation situation is

for the authoritative rate governing bodies to deny the truckers any higher rate earning than the legitimate rail companies are permitted to assess.—M. L. Cregier, Goshen Mfg. Co.

We are vitally interested in highway transportation inasmuch as our product is of such a nature that expedited service is the essential element. In addition to shipping from our plant at Glenview, Illinois, our products are redistributed from eleven different warehouses in various parts of the country. In view of the many government war-time restrictions affecting motor carriers, we feel that they have done a good job and it is our sincere hope that they will be able to continue rendering a satisfactory service.—B. E. Bannister, T.M., Baxter Laboratories, Inc.

In the canning business, we have a very busy shipping season in the fall and practically all winter and do very little in the spring and summer months.

The transportation problem so far has been pretty fair except one month when we were rushed to the point where there were no tractors available, and if the trucking companies had been able to secure more tractors the whole thing would have operated more smoothly. I believe everybody during this past winter was in more or less the same position.

After a new pack comes in and we start shipping in the fall, I know from experience and from talking to our truckers, that we will have a very serious condition if new parts and tractors are

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WAREHOUSE SAFETY PROBLEMS

War has multiplied problems of safety. Many ideas of constructive value on this subject are given on page 56.

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not available when the fall rush starts.

One more point which I wish to bring up at this time is that I believe the ICC trucking concerns have to cut down on points that they did not handle in 1935. This has put an added burden on the railroads and made it much harder for the shipper to move his merchandise, and sometimes the shipper has been forced to hold orders for weeks waiting for an answer regarding shipping instructions.—T. B. Howard T.M., Curtice Brothers Co.

It is my opinion that pressure should be brought upon those in authority to manufacture repair parts for various makes of trucks and trailers and also truck manufacturers should be allowed to make a number of various-sized trucks, if we are to continue uninterrupted service during this war period.—D. H. Jones, T.M., The Cooper-Bessemer Corp.

Recently the WPB announced additional allocations of materials for replacement parts for the second quarter of this year. The effects of this order, of course, will not be known for some time.

In any event, it is the consensus of opinion among truck operators that unless restrictions are lifted upon the manu-

Use Your Ingenuity . . .

Canvassing ways and means of getting fuller use out of the nation's trucks, the Office of Defense Transportation urges operators to use their ingenuity in adapting their equipment to as many types of cargo as possible in order to obtain full loading and return loads.

Referring especially to expedients for easing the shortage of heavy duty trucks and trailers, ODT cited the example of a Canton, O., operator who adapted flat-bed trailers, such as are used for hauling steel, to general merchandise cargo merely by adding removable sides.

The removable sides enabled the operator to obtain return loads of general merchandise making the operation more profitable and contributing to the war effort by moving additional tonnage. Cost of the removable sides per trailer unit, built by an outside contractor was said to be less than \$200.

facture and sale of new equipment and repair parts, further curtailment in the operations will necessarily have to be made, in which case the effects may result in the complete financial failure of the operators, and thus increase the burden upon other means of transportation.—S. T. Woolan, T.M., Chef Boy-Ar-Dee Quality Foods, Inc.

Some business has been effectively killed, either because rates have been increased beyond reason or because the independent trucker willing to trade at rates for full loads or on contract, has practically disappeared. Since certain movements cannot be made except by highway transportation, there is no choice. OPA ceilings do not take into full consideration these difficulties.

Interference with highway transportation is objectionable, as it is bound to affect unfavorably the war effort directly or indirectly. Some of the regular trucking companies have been obliged to refuse acceptance of cargo offered—originally entitled to the lowest rate brackets—unless such cargo agrees to pay higher rates: many lines no longer "protect class 6th" rates, thus forcing the payment of higher freight rates by about

10 per cent in excess of the minimum rates. On low cost commodities, this has major importance. One cannot blame the carrier at all. They are simply trying to "stretch" the equipment they have and make it earn the maximum possible per mile-ton unit.

More and better trucks are needed and WPB should permit their construction for civilian needs—even so, nothing is strictly non-military—but standardization of a few models, and a few sizes, is in order for economy's sake. For the duration we could use more wood and less critical materials. Plywood and plastics are suitable for a number of items previously made of metal. More trucks are, however, essential as the railroads are near the breaking point and cannot take care of ALL of the transportation. Better integration between long distance rail and short-haul truck traffic is essential. Much can be accomplished in that direction.—D. Scrivanich, Pres., D. Scrivanich & Co.

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In comparing today with same date last year, it is very evident to us that

truck service is not adequate. The service, especially on less than truckload shipments, is two or three days longer than formerly on an ordinary 500-mile haul. On connecting line freight, if accepted, service may be from one to ten days longer than previously. Many carriers have eliminated the handling of less than truckload freight or have limited shipments accepted to a minimum of 1,000 or 5,000 pounds.

The personalized service granted previously by truck lines in the way of tracers, for instance, was a definite advantage of truck service versus rail service. Today, however, on account of overburdened or inexperienced personnel, or for some other reason, it is difficult to secure even the courtesy of a reply from trucking companies. When we say this, we are speaking of our present experiences with the trucking industry as a whole. There are, of course, exceptions to every rule. There will always be certain carriers who will give good service if their entire facilities are cut down to one truck.

Various programs such as coordinated pickup and delivery, committees to expedite loading and unloading time, etc., are being set up and this will tend to help matters somewhat. The equipment, however, even with the best of care will only last so long and this matter must be granted consideration.

Certain communities have set up schooling programs so as to teach motor freight management and transportation to inexperienced personnel. These types of training classes should help greatly in assisting motor carriers secure proper clerical personnel and classes should be

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B. & M. R. R.

Member { A. W. A. Daily Trucking Service to
M. W. A. suburbs and towns within
a radius of fifty miles.

encouraged where they are not now being conducted.—Arthur C. Roy, T.M., The D. L. Clark Co.

We have had several cases in the past where our shipments have not gone forward on the date of shipment by the highway common carriers, due to the fact that the operator did not have sufficient equipment on account of being laid up for repairs; also, there have been cases where their trucks were loaded and it was impossible for them to secure drivers.

One of our big problems also, the truck operator's operating out of here is to get rid of our less truckload shipments at Chicago on Interstate traffic.

There are cases where they would take shipments to at least two or three terminals before they could get rid of them, and in some cases they had to deliver shipment to the carloading companies in order to move the freight. In each case the operator claimed they did not have sufficient equipment.

It is our opinion that if the truck operators had more equipment, also could get additional drivers, they could render a far better service.—H. H. McManus, T.M., Lyon Metal Products, Inc.

Our experience with "long haul" trucking has been rather sad in the past year with regard to fast service. We refer to hauls such as Reading, Pa., to Pittsburgh, Cleveland, Akron, Indianapolis, Chicago, etc. We have run into occasional embargoes permitted several carriers in transfer and congested areas.

The "short haul" carriers' service, to the contrary, has been excellent, up to

the present writing, and we hope that it will continue to be so. We are dependent to a great extent on this service in getting urgently needed supplies and raw materials to our plant.—J. R. Edelman, T.M., Parish Pressed Steel Co.

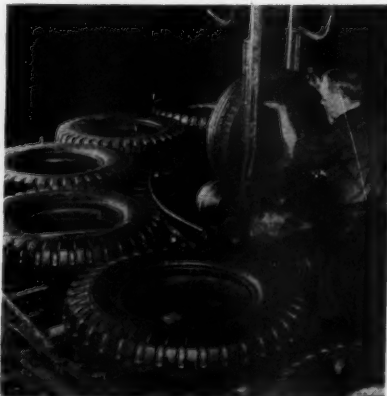
Refrigerator protection today for less than truckload quantities in many areas is practically a thing of the past, perhaps for two reasons. First, as mechan-

ical units break down, motor carriers find it extremely difficult to secure replacement parts, so they quit handling perishable products and use the truck for ordinary dry freight of which there is considerable increased volume anyway, so they forget all about the perishable products. Second, the handling of perishables requires a little extra care, and if not properly protected by experienced personnel, claims may result, so the use of dry ice and zero blankets, tarpaulins, etc., has practically ceased, as carriers no longer wish to take the responsibility upon themselves with new personnel that they do not have time to break in, and again the fact that their docks are so full of dry freight, some of which they are having a hard time getting rid of, they are forced of necessity to refuse to accept perishable shipments which might spoil while in their possession.

You ask "what should be done about it." My observation is that nothing can be done about it as long as the motor carriers are expected to handle more and more tonnage with less and less equipment.—H. H. Behrel, T.M., Booth Fisheries Corp.

The only solution I can see is for the Government to allow more trucks and trailers as well as the necessary repair parts to be manufactured and if they do not do this within a short time I very much feel our transportation system will not be adequate to take care of the actual high priority shipments. Naturally if people cannot secure trucks and can load in a railroad car they will ship via railroad, but you know this will further complicate our railroad transportation.

MATERIALS HANDLING



... Synthetic rubber tires for our armed forces are rolling by the thousands out of the Detroit plant of United States Rubber Co.

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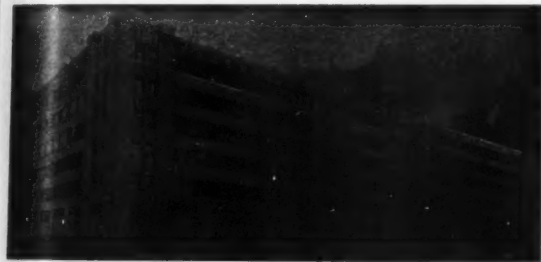
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tion problem.—Merle D. Perry, Gen. T.M., Pittsburgh Screw and Bolt Corp.

The nature of our wartime production is such that we have very little use for trucks on our outbound shipments. What little commercial business we now handle, in the way of repairs and service parts, has been, generally, reasonably satisfactory. Admittably, there has been some slow-up in our truck services, but there have been few instances where pickups have been delayed more than one day.

On the movement of inbound material, we have noticed a definite slowdown in truck services, and we feel that this is due to the lack of equipment on the part of motor carriers.—V. L. Emery, T.M., Mills Novelty Co.

We depend upon trucks and trailers to deliver practically all our outside shipments, and of course curtailment of truck construction may delay our shipments which may prove serious because we are working practically 100 per cent on war work.—H. H. Stone, Standard Stamping & Perforating Co.

Christmas Only Holiday For Duration, ICC Says

The Interstate Commerce Commission has announced that the only holiday it will observe for the duration will be Christmas Day. On all other holidays the offices will be open the usual hours, the ICC announcement stated.

We operate our own trucks besides hiring a large number. Our operations are becoming affected by our inability to obtain repair parts. Time and again we have had trucks laid up for two or three days waiting for a few common parts. We feel this situation will get worse as time goes on.

We have been fortunate in obtaining both recaps and new tires but we have had instances where a truck will be held up because of two or more blow outs on the same trip. We realize that the ration boards are all operating on quota systems. However, if it would be pos-

sible to get temporary permits allowed us to get a tire immediately so that the truck could operate and then have a permit come through if the board deemed it necessary. We realize the rubber situation and are cooperating accordingly. However, we have had instances where trucks were laid up because of lack of tires which later we were able to receive through the ration board.—Ben W. Mattek, Dist. Mgr., Debalb Agricultural Association, Inc.

Additional letters from shippers as well as letters from motor carriers and warehouse men will be published next month.

TO ESTABLISH TERMINAL

Motor Cargo, Inc., with general offices in Akron, O., will establish a terminal at 1620 E. 41st St., Cleveland. The terminal building, recently leased, contains about 7,500 sq. ft., and in addition there is vacant land fronting on E. 41st St., measuring 120 by 140 ft. The lease runs for five years. (Kline)

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Airlines Ask More Planes As Cargo Carriers

A few more planes for the commercial air carriers was asked last month by Colonel Edgar S. Gorrell, president, Air Transport Assn., to assure shipments of critical supplies in America's greatest production effort. He addressed the eighth annual meeting of the Air Transport Assn. in New York.

"It would be America's quickest and fastest stride toward greater war-time production efficiency," Colonel Gorrell said. "The billions upon billions of dollars being poured by our government into the furtherance of the war can be soundly invested only if all bottlenecks are removed from industry."

Although twice as many planes as the air lines are now flying have been transferred to military service, he reported a 50 per cent increase in air express flown during the first five months this year over last year. He said this 5,850,913 ton miles of air express was 68 per cent above the tonnage flown in the entire year of 1940.

Croil Hunter, president, Northwest Airlines, Inc., was elected vice-president of the association succeeding C. E. Woolman, vice-president Delta Air Corp. Fowler Barker resigned as secretary and treasurer to join the McGraw-Hill Publishing Co. M. F. Redfern was named secretary and Joseph Hintersehr, treasurer.

The following directors were elected: W. A. Patterson, president, United Air Lines Transport Corp.; T. E. Braniff, president; Braniff Airways, Inc.; O. M. Mosier, vice-president, American Airlines, Inc.; Terrell C. Drinkwater, executive vice-president, Continental Air Lines, Inc.; Jack Frye, president, Transcontinental & Western Air, Inc.; C. Bedell Monro, president, Pennsylvania-Central Airlines Corp., and E. V. Rickenbacker, president, Eastern Air Lines, Inc.

ICC Investigates HHG. Carriers

The Interstate Commerce Commission reopened in Chicago, on June 7, its investigation to determine if practices and procedures of motor common carriers of household goods are inconsistent with rules and regulations of the Interstate Commerce Act. Three principal points constitute the subject matter of the investigation: (1) the insuring or undertaking to insure or procure insurance on shipments; (2) giving estimates of transportation and accessorial services; and (3) collecting dock charges.

Examiner A. S. Parker heard the case in Chicago and Colin A. Smith represented the ICC in directing the course of the investigation. Further sessions were scheduled for San Francisco, Atlanta, Brooklyn, N. Y., and Washington, D. C. From the findings, it is anticipated

that revised and supplemental rules governing the practices involved will be drafted.

Among trade associations and trucking concerns in the household goods field, whose representatives were on hand for the examination were the following: Household Goods Carriers Bureau, Washington, D. C.; Independent Movers & Warehouse Association, New York; Aero-Mayflowers Transit Co., Indianapolis, Ind.; Michigan Movers & Warehouse Association, Lansing, Mich.; United Van Lines, St. Louis, Mo.; No. American Van Lines, Cleveland, Ohio; Beekin Van Lines, Omaha, Nebr.; Delcher Bros. Storage Co., Jacksonville, Fla.; and the following from Chicago, Allied Van Lines, National Van Lines, Transamerican Van Services, Fernstrom Fireproof Warehouse Co., Warren Bros. Co. (Slawson).

Burks Heads C & S Air Cargo Research

Chicago & Southern Air Lines has announced the creation of a new department of research in Chicago with Wm. C. Burks, former district manager, as director. Starting June 1, Mr. Burks took charge of plans for post-war expansion of air cargo transportation for the company. Wm. P. Gillen, New Orleans district traffic manager, has replaced Mr. Burks as Chicago district manager. (Slawson)

Good Housekeeping Means Efficiency and Economy

GOOD housekeeping is cleanliness and order, with no unnecessary things about and necessary things in their proper places. The experienced supervisor sees that management provides the proper facilities and that workers make the right use of them. If he finds a puddle of oil on the floor he doesn't stop with cleaning it up; he finds out how it got there. Perhaps a drip pan or an improved method of oiling machines would have prevented that pool of oil which resulted in a badly wrenched back.

The experienced supervisor is constantly inspecting for danger spots, always watchful. If he finds that workers leave bottles and other refuse on the floor, he provides a good container where they can more easily dispose of such things. He knows that a grand clean-up once in a blue moon isn't enough; good housekeeping is an everyday job.

What are some good housekeeping aids?

(a) Racks to hold a set of tools and parts needed at a given machine or station are often very helpful.

(b) Scrap and waste should be collected regularly, or, where possible, as they are produced.

(c) Aisles should be clearly marked and materials piled out of the aisles and in proper storage places.

(d) Materials should be piled so they can be handled safely, with consideration for the strength of the floor, the location, and the guarding of the pile. Flammable or explosive substances should be stored in safety containers easily identified, and not more than a day's supply should be in use at a time.

(e) Machinery and equipment should be arranged to permit efficient production and reduce overcrowding.

(f) Work should be planned so that raw materials and finished products do not clutter up the working space and increase the hazard. Improper planning often results in slack periods of production, followed by times demanding increased speed of production. Under pressure of speed, some individuals attempt to produce beyond their ability to work safely.

(g) Cleanliness of machines and other equipment is particularly important. Operation of dirty machines results in greater repair bills, inefficiency, and an increased amount of scrap. If you allow workers a reasonable amount of time—

possibly 15 minutes—for cleaning their machines, it will reduce hazards and increase production.

(h) Splash guards and drip pans should be used to keep oil off the floor.

(i) Projecting nails should always be removed or clinched over safely, even in material that is to be burned, to prevent wounds which often result in infection.

(j) Electric light reflectors, bulbs, and windows should be kept clean, as lighting is of major importance to production and safety. Walls should be clean and painted.—“Safety Speeds Production,” U. S. Dept. of Labor.

To Build 500-Acre Depot In Pacific Northwest

AUBURN, WASH.—An eleven-million-dollar storage depot is to be constructed here to provide added facilities for handling lease-lend shipments out of Pacific Northwest ports. A site of 500 acres is needed for the project which will be operated by the U. S. Army. The depot will provide 4,000,000 sq. ft. of storage space, an 800-freight car holding yard, and a 400-car railroad classification yard. Auburn was chosen because the Great Northern, Union Pacific, Northern Pacific and Milwaukee, have tracks here, Maj. Gen. Charles Wesson, senior assistant in lend-lease gave as the reason for the site selection for this holding and reconsignment depot. (Cooke)

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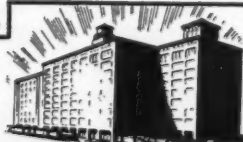
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COMPETENT**Member **AMERICAN WAREHOUSEMEN'S ASSOCIATION****In the Heart
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SURVEY OF LABOR REQUIREMENTS IN PUBLIC WAREHOUSING INDUSTRY

After the usual seasonal decline which was reported in Jan., 1943, the public warehousing and storage industry showed an increase in employment of approximately 0.5 per cent from January to March, according to the March survey of current and anticipated employment conducted by the United States Employment Service. Reports for March covered 108 establishments with 12,115 employees, or approximately 18.6 per cent of the estimated total employment in the industry, according to a recent statement issued by the Office of Defense Transportation, Division of Transport Personnel.

The employers covered in the survey forecast a rising trend in employment from 65,099 in March to 71,176 in September, an increase of 9.3 per cent. Employment in March, 1944, is expected to be 3.3 per cent higher than in March of the current year. On the basis of employer forecasts, total employment in the industry is estimated as follows: March, 1943, 65,099; April, 1943, 66,937; June, 1943, 69,720; Sept., 1943, 71,176; March, 1944, 67,232.

A number of companies reported that they were expecting government orders to hold the warehousing business level up throughout the year. At the same time there are numerous seasonal fac-

tors affecting the stability of employment in the industry. For example, a fish storage establishment in Massachusetts expected its seasonal peak in May and June, a general storage company of New York City in late spring and early fall, a Massachusetts food storage establishment from May through June, a wool storage establishment during summer months, and a general storage and transfer company of Tennessee in September.

Critical Labor Shortages

Three companies reported critical shortages in March as compared with two in January. A warehouse in Missouri reported a shortage of five warehousemen and two heavy truck drivers, and a company in San Diego reported that 21 consignments have not been handled, due to a shortage of five furniture packers and five truck drivers. Five pieces of equipment were reported idle by the latter company. Inasmuch as the third company reported a critical shortage of one typist, its inclusion in the list of companies reporting critical shortages is not of particular significance.

Of the 108 companies covered in the survey 69 reported labor needs of one or more employees. On the basis of this

sample it was estimated that the labor needs of the industry during the next six months will total 8,015.* Layoffs by the industry are expected to total 443 during the next six months' period.**

Nineteen establishments gave detailed information on labor needs and reported 926 jobs to be filled during the next six months, of which 892 were unskilled and 31 were truck driver positions. Twenty-seven truck drivers were needed for the current month. Many of the unskilled jobs reported must be filled in May and June.

A large proportion of the labor needs and expected layoffs in the warehousing industry is due to changes in seasonal requirements. As reported above, certain branches of the warehousing industry have different seasonal peaks and slumps. Some companies, however, stated that a large part of their seasonal changes had been eliminated as a result of increased orders from the government.

A terminal company in Chicago reporting labor needs of 96 workers stated that draft exempt men over 38 years of age were being recruited for these jobs. A cold storage warehouse in Los Angeles, which will need 29 common laborers, reported that it will hire high school boys for part-time work.

Due to the large number of temporary

* Labor needs represent current vacancies at the time of the survey, new jobs the industry expects to fill due to expansion, and expected replacements of men called to military service.

** Anticipated layoffs represent separations of workers from their jobs thus constituting an addition to the net labor supply.

and seasonal workers employed in this industry, reported labor turnover is exceedingly high. Where it was specifically stated that hires or layoffs were of temporary workers such figures were not included in the turnover rates but this was possible in only a few instances. From January to March the accession rate increased from 8.1 per cent per month to 9.3 per cent, while during the same period the separation rate declined from 9.5 per cent to 9.0 per cent. Since the accession rate was higher than the separation rate during the two months, January and February, there was a net increase in employment.

Employment of Women

The strenuous nature of warehousing work is generally indicated as a limitation on the employment of women workers in the industry, and a large majority of the women workers are employed in clerical occupations. The number of women workers in the industry increased to 5,840 in March, a gain of 2.4 per cent over the January figure, and they now constitute 9.2 per cent of all employees in the industry.

A Los Angeles warehouse reported that there were several warehousing jobs, such as floor foreman and checker, which could be performed by women workers, and a warehouse establishment in San Francisco stated that it was contemplating the employment of women as

checkers because of inability to hire male workers.

The proportion of non-white workers employed increased from January to March, rising from 13.9 per cent to 14.4 per cent over the two-month period. It is estimated that the industry employed 9,967 non-white workers in March, 1943, a gain of 3.9 per cent over January.

Non-white workers are chiefly employed in such unskilled occupations as loaders, laborers and porters, but an increasing number of establishments are employing them as truck drivers. Besides the four Southern establishments mentioned in the January report, a Birmingham company employs one Negro truck driver and a Jacksonville company employs three Negro truck drivers. An increasing number of establishments other than those in Southern cities are also reporting the employment of non-white workers as truck drivers.

Recruitment and Training

A majority of the workers employed in the warehousing industry are recruited through unions but an increasing share are now being hired through the United States Employment Service. New workers placed by the United States Employment Service increased from 10.2 per cent in January to 12.7 per cent in March. A substantial proportion of these placements represented temporary and casual workers.

A number of companies reported that

union agreements prevented the United States Employment Service from being the major recruiting agency. However, a California concern stated that it maintains a standing open order with the Employment Service for laborers, and a warehouse in Chicago reported that it would use the United States Employment Service exclusively since the union has not been able to meet the company's labor needs. In Los Angeles, a cold storage warehouse reported that some part-time workers were hired through the Board of Education Placement Office, and a general warehouse establishment reported that warehousemen were hired through the A. F. of L. Warehousemen's Union for short periods only and they then were returned to a common labor pool.

A majority of the companies reported that there was no need for any planned training programs and many others stated that they were too small to institute their own training programs. Other establishments mentioned the fact that the occupations in the warehousing industry did not lend themselves to training programs.

A cold storage company of Chicago reported that it was training three receiving and delivery clerks and one stationary engineer, and a general storage company of Tennessee reported that it is now training laborers to crate furniture and is upgrading helpers to truck drivers.

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**LEHIGH WAREHOUSE
AND TRANSPORTATION CO., INC.**

Legal Questions And Answers

(Continued from page 62)

their merchandise.

The warehouseman contended that he had used "ordinary" care to prevent loss of the goods because hydrants were at close intervals outside and inside the warehouse building, and further, the city maintained a fire department. However, in view of the fact that the warehouseman had failed to provide a night watchman, the higher court held the warehouseman liable for full damages and said that the failure to keep a night watchman at this particular warehouse was the proximate cause of the fire loss.

Also, see Dupatch, 170 N.E. 551. In this case the higher court held the warehouseman liable for fire loss.

Any statement made by a warehouseman to a prospective patron may be the basis of a subsequent suit. This rule of the law is applicable although the warehouseman issues a warehouse receipt containing specific written stipulations which are contradictory.

For example, in Fox v. John F. Ivory Storage Co., 246 N.W., 147, it was disclosed that a warehouseman represented, during conversation with a prospective patron, that the warehouse was fireproof. The patron stored furniture in the warehouse which later caught fire, and the stored goods were burned.

The patron filed suit against the warehouseman to recover the value of the goods. The counsel for the warehouseman attempted to avoid liability on the grounds that the warehouse receipt stipulated that there would be no liability for loss or damage by fire.

Notwithstanding this argument the higher court held the warehouseman liable.

It is important to know that certain higher courts have held that warehousemen in small towns are not required to employ night watchmen where the evidence proves that the income derived from the warehouse business does not justify the expense of paying a watchman.

Freight Rate Revision Opposed in Pittsburgh

Pittsburgh, Pa., Chamber of Commerce has recommended that Pennsylvania Governor Edward Martin and the state C of C actively oppose the move by southern and western states to make freight rates more uniform. It is contended that such legislation would "react unfavorably upon Pittsburgh business and commerce," and that were a change justified, by the present method, revisions are not being made the right way by the Interstate Commerce Commission. It was pointed out that the ICC already has a "trustworthy and experienced" agency to ascertain proper rates.

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Inland Route for Bauxite First Used in 1941

Since the publication in our April issue, pg. 26, of an article to the effect that the Chicago Tribune in 1942 originated the idea of moving bauxite ore inland via the canal system, as a practicable means of offsetting the Al U-boat menace, it has been ascertained that, in 1941, the W. E. Hedger Transportation Corp., 120 Wall St., New York, carried approximately 100,000 tons of bauxite ore from New York to Buffalo thence down the St. Lawrence waterway to Port Alfred on the Saguenay River.

In other words, W. E. Hedger Transportation Corp. was using the inland waterways for the transportation of bauxite ore exactly one year before the Chicago Tribune. Confirmation of the fact may be obtained from Mr. Harmon Lewis, president, Alcoa Steamship Co. Inc., 17 Battery Pl., New York, who delivered the bauxite ore to the W. E. Hedger Transportation Corp. in 1941 for further transportation up the inland waterways, and from the Hon. Guy V. Pinck, Commissioner of Canals and Waterways of the State of New York, custodian of the official records.

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"Revolution in Transportation Definitely Under Way"

• Airplane will affect institutions and marketing practices more than automobile did, speakers at New England aviation conference predict.

"A REVOLUTION in transportation is definitely under way," Charles I. Stanton, administrator, Civil Aeronautics Administration, stated in an address at the Hotel Statler, June 10, before the Aviation Conference convened under auspices of the Aviation Committee, New England Council, to discuss New England's place in post-war aviation.

"Its full implication cannot be foreseen," continued Mr. Stanton, but certain things in the aviation picture are now quite clear. The manufacture of planes, engines and accessories today is the largest industry in the country, far surpassing such giants as automobile and steel.

"In 1939 production totalled \$280,000,000. During 1943 it will reach the almost astronomical sum of \$20,100,000,000, representing one-fourth of the war budget for the year and almost one-seventh of the estimated national income

for the year. Production for 1944 on a basis of tonnage, is scheduled to be half again as large. Beyond question we have the largest and finest aviation facilities in the world, and they currently employ about 2,500,000 workers.

"Second, we shall soon have some 3,000,000 men in the air forces of the Army and Navy, not only pilots but navigators, mechanics, radio men, meteorologists, air traffic experts, airport engineers, and other aviation specialists. What are these men going to do when the war is won? Are they going to be content to be groundlings again?

"Our airways and airport systems are keeping one step ahead of the rapid increase in planes and pilots. Two years ago we had only 76 major civil airports capable of handling the largest craft. By the end of this year we shall have 865 not counting many large airdromes built exclusively for military use. We have

more than 2,000 minor airports situated for the most part near smaller cities. We shall need many more of these if flying is to become general. Also, we shall need more major ports. Traffic along the airways is increasing at a breath-taking rate, jumping from 300,000 aircraft movements a year in 1938 to an estimated 14,000,000 for the current year. Recent growth of express shipments has greatly increased."

"By 1950, Mr. Stanton predicted, it seems likely that aircraft movements will total 60,000,000 a year. By that time we shall probably have in the country about a half million private, commercial, and military planes in active service. To appreciate the momentous significance of that figure it is only necessary to recall that at the end of 1941 there were in the entire country less than 25,000 licensed planes. Civilian aviation, in short, is going to enjoy a

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phenomenal growth after the war. Commercial operations will continue to increase at an accelerating rate during the next ten years."

Referring to the profound influence of the motor car upon all of our institutions, including marketing practices, the speaker declared that the airplane is likely to have an even deeper influence.

"The spread of air cargo transportation throughout the land will come from the use of one or all of three types of cargo carrying: the air pick up system, the glider, and the helicopter," John F. Budd, editor and publisher, *Air Transportation*, stated in his address on air cargo.

There are 142 airports in New England; 70 are publicly owned and 10 operated by the military forces, Harvey F. Law, Regional Supervisor of Airports, Civil Aeronautics Assn., stated.

Many of the military fields will be turned over to the public at the conclusion of the war, he said. Some of them have been equipped by the Army with spur tracks, loading space and warehouses particularly adaptable for use by cargo planes, he noted, urging consideration of construction of similar airfields in other sections of this area.

Mr. Law cautioned his hearers on the futility of the speculative type of airport-building that characterized the infancy of aviation and stressed the importance of integrating the planning of airports with city planning.

In the question period following Mr. Law's address, he intimated that he felt airports should be constructed with runways of sufficient length for cargo planes, one area for passengers and one area for straight cargo planes. A master plan can be worked out so as to have areas for each. No airport has been planned for cargo alone, he said. In large cities, one airport will not suffice. In the larger communities, we should plan for three or four airports at the same time.

Many smaller communities are looking for air cargo, it was said. In a town in Delaware, they operate a large poultry business and they want air service so that they can ship day-old chicks into New York.

Harold Crary, vice-president in charge of traffic, United Airlines, Chicago, said that despite the turning over of a number of airplanes to the Army, the airlines this year will transport 43,000,000 pounds of express.

"Our company has made studies which indicate that within a reasonable period after the war airlines will carry 40 per cent of the express now carried by rail; 10 per cent of rail l.c.l. freight, and 5 per cent of motor truck l. & l. freight. This does not mean that the airlines are going to put the rail, steamship and truck lines out of business. The airlines will supplement instead of supplant and, after the war, all forms of transporta-

tion will be greatly improved and coordinated."

There were 140 present, including secretaries of local chambers of commerce, members of state or municipal aviation committees, airport managers, and planning board members. (Wellington)

**Government Ownership
Opposed by Air Experts**

The inter-departmental committee of aviation experts to study American policy on post-war international aviation has agreed upon two basic policies: No government ownership in any degree, and no monopoly by any single United States air line. An official report embodying these recommendations and the reasons for them is being prepared.

These are the first recommendations of the committee, which was established last January. Its chief task is to find some feasible post-war substitute for the trade-stifling reciprocity method under which various countries before the war were at loggerheads over a simplified international air policy.

The committee originally represented five government agencies. They have been joined recently by members of the Board of Economic Warfare. The original five agencies are the Department of Commerce, War and the Navy, the Civil Aeronautics Board and the Office for Emergency Management.

VOLUNTEER TRUCK POOLS URGED TO MOVE PACIFIC COAST CROPS

Faced with the most serious transportation situation it has ever known, California is threatened with great losses in fruit and vegetable crops unless extraordinary measures are taken to mobilize all available facilities. At the same time wartime food needs demand 100 per cent utilization of available crops, many of which have been augmented to meet increased food needs.

In an attempt to get movement of this season's fruits and vegetables from ranches and orchards to processors and markets, the California State Council of Defense has asked for the organization of "volunteer truck pools" by all county and city defense councils.

In its call for the formation of these volunteer pools the Council said: "The formation of truck pools is absolutely essential to prevent serious loss of California fruit and vegetable crops this summer. Your Council Defense Committee offers the best channel for obtaining voluntary trucking facilities to meet the coming crop transportation shortages. Only the highest possible degree of co-operation can prevent serious losses." (Gidlow)

Conserve Maintenance Brushes

Only the most drastic conservation of critical materials will enable the maintenance brush manufacturers to meet the demands of the military, industry and essential civilian needs, it was pointed out at a meeting of the Maintenance Brush Manufacturers Industry Advisory Committee and government officials recently.

Maintenance brushes require steel, copper wire and wood—three of the most critical materials. Bristles, horse and animal hair and fibre for these brushes are mostly imported, with the exception of fibres like palmeto and tampico which can be obtained in Florida and Mexico.

Individual manufacturers have been exercising the greatest stringency in the manufacture of these brushes to prevent dissipation of their inventories and stock-piles. Some manufacturers have cut down as much as 80 per cent in types and styles. Because there has been no concerted action, the industry is said to have expressed a desire to have the government issue a restraining order on fibres.

Tidelands Resolution Opposed in San Francisco

Don Fazackerley of the Bay Area Maritime Committee has called for a strong protest against the pending Nye resolution which would grant the Federal Government title to all tidelands, including submerged and reclaimed lands. The measure is now tabled in the Senate.

San Franciscans are up in arms against the resolution because the tidelands of San Francisco Bay include some of the city's important properties. Much of downtown San Francisco is built on reclaimed tidelands. The committee regards the Nye resolution as a threat to "property and commerce throughout the Bay region." The Bay area counties are gathering complete information so that they may be able to unite in concerted opposition to the proposal to place such tidelands under the authority of the Federal Government.

Participating in the opposition will be the representatives of Alameda, Contra Costa, Marin, Napa, Sacramento, San Francisco, San Joaquin, San Mateo, Santa Clara, Solana and Sonoma, all of which touch somewhere on the San Francisco Bay and its vast tidelands. The committee will work with the National Association of Port Authorities in opposing the Nye resolution. (Gidlow)

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Merchandise Storage & Pool Car Distribution
Consign Shipments via any railroad

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SERVING THE NEW YORK MARKET

There is no problem in Warehousing and Distribution which we cannot work out satisfactorily with the shipper. We have advantages in location and in equipment which enables this company alone to do certain things which cannot be done elsewhere.

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Pool Car Distribution—Commercial—
Industrial and Long Distance Moving
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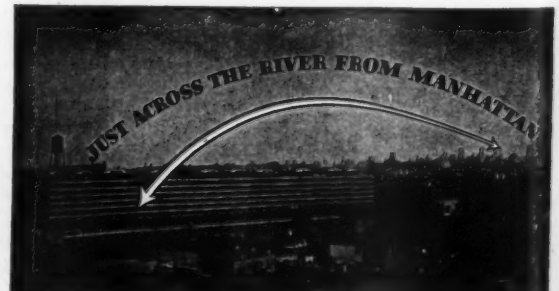
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GENERAL STORAGE WAREHOUSES

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Merchandise Distribution

LOUIS MAURO

Bonded Truckmen and Forwarders

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3,000,000 Cubic Feet—Pool Car Distribution

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\$5,600,000ESTABLISHED
1882

GENERAL MERCHANDISE STORAGE

EASY ACCESSIBILITY QUICK HANDLING
EXCELLENT LOADING FACILITIES NEW YORK'S LARGEST TRUCK SCALE
TWO MODERN FIREPROOF WAREHOUSES
SPRINKLED SECTIONS LOW INSURANCE RATES

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STORAGE & WAREHOUSE CO.

Third
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Storage, Distribution and Freight Forwarding
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IN THE VERY CENTER OF NEW YORK CITY
Adjacent to All Piers, Jobbing Centers
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Unusual facilities and unlimited experience in forward-
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Valley R.R. siding—12 car capacity—in the building.
Prompt handling—domestic or foreign shipments.

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Represented by Associated Warehouse, Inc.—New York City and Chicago

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THE NATIONAL COLD STORAGE CO., INC.

Operating Warehouses for Storage of Perishable Food Products

DISTRIBUTION FACILITIES—BONDED AND FREE

Brooklyn Warehouse Adjacent to Pier and Wharf Accommodations

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Free and bonded storage facilities licensed by Commodities Exchanges.
Space for lease (large & small units) for manufacturers and distributors.
Pier and wharf accommodations.
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Two Fumigation Chambers

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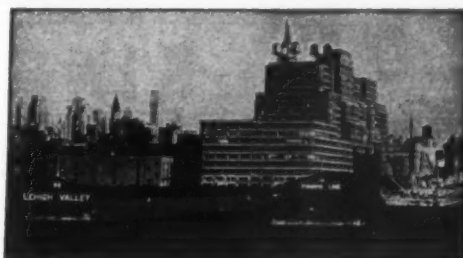
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ALL POINTS RADIUS 35 MILES

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STARRETT-LEHIGH BUILDING



Outstanding as its dominance over New York's West
Side midtown skyline, the STARRETT-LEHIGH BUILDING
offers the manufacturer and distributor superior advantages:

- Lehigh Valley R. R. freight terminal on street level;
elevators direct to rail yard platform
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facilities throughout
- Floor areas, 32,000 to 124,000 sq. ft. Smaller
units may be leased
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HOUSEHOLD GOODS

Storage • Distribution • Trucking • Packing
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Modern up to the minute DRY, COLD and Sharp Freezer
facilities with ventilation and humidity control. Tempera-
ture Range for COLD and Sharp Freezer facilities 15 to 35°
above. Storage-in-transit privileges.

All Fireproof buildings—Very low insurance rates. 60 car
private siding—Free switching—U. S. Warehouse Act—
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FRUITS
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GEORGE M. CLANCY CARTING CO., INC.

Storage Warehouse

Main St., East at Circle St.

General Merchandise Storage—Distribution

Pool Cars Distributed—Reshipped

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Household Goods Moved—Stored—Shipped

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Offices: 151 Erie Blvd., Schenectady 5

General Merchandise Storage and Distribution

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GREAT NORTHERN WAREHOUSES, INC.

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MERCHANDISE STORAGE and DISTRIBUTION

2 PRIVATE RAIL SIDINGS

DAILY, STORE-DOOR, MOTOR FREIGHT SERVICE TO ALL NEW YORK STATE POINTS

Member American Chain of Warehouses—MayWA

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DISTRIBUTION
MOTOR FREIGHT LINES
PRIVATE RAIL SIDINGS

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STORAGE WAREHOUSE, INC.
SINCE 1897

COMPLETE MERCHANDISE AND HOUSEHOLD GOODS STORAGE
SERVICES

Represented by
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BROAD STREET WAREHOUSE, INC.

Complete Warehousing
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Heated Storage

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Daily Trucking Service to all
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Specializing in Cotton, Cotton Waste, Textiles, Alkalis,
Denatured Alcohol, Anti-Freeze, Automobiles, Etc. Ware-
houses on D.L.&W. and N.Y.C. Private siding. Sprin-
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Office & Warehouse: 107-121 Brookfield St.

Household Goods Moving, Storage, Packing, Shipping

Prompt service for any point in Westchester County

Member N.F.F.W.A.—N.F.W.A.

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AMERICAN STORAGE & WAREHOUSE CO.

CHARLOTTE, N. C.

OFFICE AND WAREHOUSE, 926 TUCKASEEGEE ROAD

MERCHANDISE STORAGE ONLY. POOL CARS DISTRIBUTED.
MOTOR TRUCK SERVICE LOCAL AND DISTANCE. PRIVATE
RAILROAD SIDING. SPRINKLERED.

ESTABLISHED 1908

FACTORIES ON THE MOVE

(Continued from page 72)

manufacturer pressed steel products, has arranged for lease of series of 6 large buildings on Minnesota State Fair Grounds, and will remodel and convert for new branch plant for production of airplane propellers for Government. Work will be placed under way soon. Cost reported over \$2,000,000, with financing provided by Defense Plant Corp., Washington, D. C., federal agency.

Stillwater, Minn.—Standard Salt & Cement Co., Duluth, Minn., has acquired industrial property at Stillwater, heretofore held by Gilbert Mfg. Co., comprising 1-story buildings, and will remodel and equip for new branch plant for the manufacture of forgings for military service. Equipment will be installed soon.

Kansas City, Mo.—Englander Co., Inc., 801 Armour Rd., North Kansas City, manufacturer mattresses, bedding, etc., has leased new 1-story factory to be erected at 16th St. and Burlington Ave., North Kansas City, by North Kansas City Development Co., and will occupy on completion for new plant, removing present works to that location and providing additional equipment for increased output. Cost estimated about \$90,000, with equipment. Main offices of company are at 538 Johnson Ave., Brooklyn, N. Y.

Kansas City, Mo.—Witte Engine Works, Inc., 1800 Oakland Ave., manufacturer oil and kerosene-operated engines, parts, etc., plans large 1-story

foundry on recently acquired tract of land bounded by Richmond and Oakland Aves., 16th St. and 16th St. Terrace. Cost reported close to \$100,000. Proposed to begin work soon.

St. Louis, Mo.—Blanton Co., 3400 North Wharf St., manufacturer of oleomargarine, vegetable oil products, etc., has plans maturing for new plant on local site recently acquired in vicinity of Buchanan St. It will be 1-story, equipped for soy bean processing, and is reported to cost over \$90,000. Erection will begin soon. Gray & Pauley, 3800 West Pine St., are architects.

St. Louis, Mo.—Laclede-Christy Clay Products Co., Ambassador Bldg., manufacturer fire brick and other refractory products, will build new 2-story warehouse on local site at 4714 South Kingshighway, work to begin at once. Cost reported over \$30,000.

Irrington, N. J.—Eastern Superior Co., Inc., 275 Pearl St., New York, N. Y., manufacturer tools and special machinery, has leased 1-story industrial building at 8-16 Renee Pl., Irrington, and will improve and occupy for new plant.

Irrington, N. J.—United Marine & Equipment Co., 498 Passaic Ave., East Newark, N. J., manufacturer mechanical equipment, has leased a 1-story factory at 88-90 Coit St., here, and will improve

and equip for expansion. Present works will be continued as heretofore.

Newark, N. J.—Federal Telephone & Radio Corp., 250 South St., manufacturer radio and television equipment, etc., has leased local building at 534-36 S. Broad St., and will occupy for new branch assembling plant.

North Bergen, N. J.—Paradis Machine Co., 6502 Hudson Blvd., West New York, N. J., manufacturer tools, machine parts, etc., has leased industrial building at 4561 Hudson Blvd., here, formerly used by Hudson County Buick Co., and will improve and equip for branch plant. Present works will be continued as heretofore.

New York, N. Y.—Acme Litho Plate Graining Co., 46 Great Jones St., manufacturer lithographic plates, etc., has leased a 3-story building at 150 W. 54th St., and will occupy for plant, expanding present capacity.

New York, N. Y.—Arrow Horseradish Co., 420 E. 110th St., manufacturer food products, has purchased 1-story industrial building at 325 E. 122nd St., and will remodel and equip for new dehydrating plant. Work scheduled to be carried out at once.

Chadbourne, N. C.—Lacy Tate & Co., food products, have plans for new dehydrating plant on local site, to be about 50 x 120 ft., estimated to cost about \$50,000, with machinery. Erection is scheduled to proceed at early date.

Charlotte, N. C.—United Aero Service, Inc., care of General Discount Corp., Volunteer Bldg., Atlanta, Ga., recently organized as a subsidiary of latter company, has acquired former factory of Foley Mfg. Co., Lawyers Rd., here, consisting of several 1-story buildings on large tract of land; will modernize and equip for new plant for manufacture of aircraft products. Cost reported over \$250,000, with machinery. E. F. Howington, first noted address, is president.

Shelby, N. C.—Full-Knit Hosiery Mills, Burlington, N. C., manufacturer men's half-hose, has leased 1-story factory on S. Morgan St., and will modernize and improve for new branch mill. About 60 knitting machines and auxiliary equipment will be removed from Burlington to new location. Work will be carried out soon. W. W. Sellers is president.

Cleveland, Ohio—High Level Screw Products Co., Inc., recently organized to manufacture screw machine products, has leased former factory of Premier Wire Works, 2114 W. Superior Ave.; will occupy for plant. New company is represented by Paul Mancino, 513 Public Sq. Bldg., attorney.

Warren, O.—Brainard Steel Co., Larchmont Ave., N. E., has taken over a 1-story industrial plant on E. Orwell St., formerly occupied as a creamery, and will remodel and equip for new steel fabricating works. Cost reported over \$85,000, with machinery. Project is being placed under way.

Oklahoma City, Okla.—Douglas Aircraft Co., Inc., 3000 Ocean Park Blvd., Santa Monica, Cal., has contracted with Government for operation of two large aircraft plants to be built in this vicinity and Tulsa, Okla., respectively, each to consist of a number of 1-story buildings, with power station, administration building and miscellaneous structures. Cost estimated close to \$7,000,000, each, with financing provided by Defense Plant Corp., Washington, D. C., federal agency. Erection will be placed under way soon.

Cambridge Springs, Pa.—Burdick Mfg. Co., Meadville, Pa., manufacturer of aircraft parts, has purchased former factory of Hoppenstad Industries Co., here, and will improve and equip for plant. Present works will be removed to new location and additional equipment installed for increased capacity. Lawrence H. Burdick is president.

Philadelphia, Pa.—Quaker Pile Fabric Corp., C St. and Indiana Ave., manufacturer upholstery fabrics, etc., has purchased group of 1-story factory buildings on local site at Godfrey Ave. and 21st St., totaling 40,000 sq. ft. of floor space, and is said to be planning to equip and occupy for expansion at early date.

Scranton, Pa.—Briggs Corp. of America, Inc., 7700 Russell Ave., Detroit, Mich., manufacturer steel automobile bodies, heavy steel stampings, etc., will build new plant here for production for Government, consisting of several large 1- and multi-story buildings, for which

general erection contract has been let to Esslinger-Misch Co., 159 E. Columbia St., Detroit. Cost reported about \$4,000,000, with financing provided by Defense Plant Corp., Washington, D. C., federal agency. Work scheduled to begin soon.

Providence, R. I.—New England Stationery Co. has purchased 2-story and basement industrial building at 702 Eddy St., and will improve and occupy for new warehouse. Samuel and Nathan Weiss are heads.

Harleyville, S. C.—Volunteer Portland Cement Co., Knoxville, Tenn., has contracted with Government for construction and operation of new plant in this vicinity (Dorchester County) for production of alumina, comprising several large 1- and multi-story buildings, to be equipped for a capacity of about 40 tons per day. Cost estimated about \$2,600,000, with financing to be provided by Defense Plant Corp., Washington, D. C., federal agency. Work will be placed under way at once.

Fort Worth, Tex.—Hutchinson Pipe & Waste Material Co., has plans for new 1-story building at 601 N. Throckmorton St., to be used as a warehouse. Cost reported about \$20,000, with equipment.

Mason City, Wash.—Coulée Dam Irrigation Cooperative, Inc., Elmer City, Wash., plans new 1-story warehouse here, for storage and distribution of vegetable products in that district. A new canning plant also is proposed at same place.

CHARLOTTE, N. C.

Carolina Transfer & Storage Co.

1230 W. Morehead St., Charlotte, N. C.

Bonded fireproof storage.
Household goods and merchandise.
Pool cars handled promptly. Motor Service.
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FARRAR TRANSFER & STORAGE WAREHOUSE

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Household Goods — Merchandise
Long Distance Moving — Pool Car Distribution
Private Siding, A. C. L. Railroad Co.
Members, N. F. W. A. — A. T. A.

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All buildings fully fireproof construction

UNION STORAGE & WAREHOUSE CO., Inc.

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224-226 & 306-308 West First Street

MERCHANDISE STORAGE — POOL CAR DISTRIBUTION

Member of A.W.A.—Motor Service

FARGO, N. D.

Union Storage & Transfer Company

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General Storage—Cold Storage—Household Goods
Established 1906



Three warehouse units, total area 161,500 sq. ft.; of this 29,320 sq. ft. devoted to cold storage. Two buildings sprinkler equipped. Low insurance costs. Spot stocks, Pool car Distribution. Complete warehouse services. Fargo serves North Dakota and Northwestern Minnesota.

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Champion Storage & Trucking Co., Inc.

326-28 South Davie St., Greensboro, N. C.

Merchandise & Household Goods
Pool Cars—Trucking Service
Sprinkler System — Private Siding
Member MAYWA



GRAND FORKS, N. D.

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Local and Long Distance
Hauling of Freight
and Household Goods

WAREHOUSE CO.

General Storage—Moving Household Goods
Pool Car Distribution—Motor Freight
Terminal

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MERCHANDISE STORAGE
POOL CAR DISTRIBUTION

Private Siding

Motor Freight Line

Members

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OR DISTRIBUTION SERVICE IN OHIO

SELECT

APPROVED MEMBERS
OF THE O. W. A.

MEMBERSHIP LIST MAILED ON REQUEST

OHIO WAREHOUSEMEN'S ASSOCIATION

COLUMBUS

OHIO

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AKRON, OHIO

COTTER CITY VIEW STORAGE COMPANY
70 Cherry St., Akron, Ohio

Member of May.W.A.—O.W.A.—A.W.A.

Merchandise Storage.
A.D.T. Alarm.
Pool Car Distribution.
Household Goods Storage.
Low Insurance.

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CANTON STORAGE, Inc.
FOURTH AND CHERRY, N.E.

Merchandise, Household Goods, Cold Storage

Pool run distributed. Private sidings. Free switching on all roads. Separate fireproof warehouses for household goods.

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90 YEARS OF WAREHOUSING

Cincinnati Merchandise Warehouses, Inc.
7 W. Front St. Cincinnati, Ohio

Merchandise Storage—Pool Car Distribution
P.R.R. & Sou. R.R. Sidings—Low Insurance Rates
Air Conditioned Space—U. S. Customs Bonded

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11001 ALBANY ST. PHOENIX 4-0966 1375 NEWBERRY AVE. MOBILE 333

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Member of A.W.A.—O.W.A.

9,000,000 Cubic Feet Strictly Fireproof

Select the Warehouse Used by the Leaders!

GENERAL STORAGE—COLD STORAGE—POOL CAR DISTRIBUTION—LONG DISTANCE TRUCK TERMINALS

11 Car Switch in Building

Internal Revenue and General Bonded Storage
Insurance Rate 14 1/2¢ per \$100 per annum

CINCINNATI TERMINAL WAREHOUSES, INC.
49 CENTRAL AVE. HARRY POSTER, General Manager CINCINNATI, O.



FERGUSON MOVING & STORAGE CO.
5225 MADISON RD. • 1220-1232 HARRISON AVE.

NORTH AMERICAN VAN LINES, INC.
Long Distance Moving

CINCINNATI, OHIO

CINCINNATI'S NEWEST WAREHOUSE

QUEEN CITY WAREHOUSE
42 MAIN STREET CINCINNATI, OHIO

CONCRETE AND MASONRY CONSTRUCTION
DRY CELLARS
ENCLOSED SIDING

SPRINKLERED THROUGHOUT
POOL CAR DISTRIBUTION
SAMPLE ROOMS

Insurance rate: 12.6¢ per \$100 on 80% Co. Insurance and 12.0¢ on 90%
Fumigation Service in Connection

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CURTIS STORAGE & TRANSFER, INC.

"STORE WITH CONFIDENCE"

Specializing in Merchandise Storage
Pool Car Distribution—Bulk Tank Storage
Operating Own Delivery Equipment
Private Siding N.Y.C.R.R.

FRENCH & WINTER STS. CLEVELAND, OHIO

CLEVELAND, OHIO

"An old organization with young ideas"

THE GREELEY-GENERAL WAREHOUSE COMPANY

located in the
New York Central Freight Terminal

BROADWAY AND EAST 15TH STREET

CLEVELAND, OHIO

Now there are **4 LEDERER TERMINALS**

WATER, RAIL AND TRUCK FACILITIES

Cleveland's Only Lakefront Public Warehouse with Direct
Connecting R.R. Facilities Offices: FOOT OF E. 9th ST.
Member of O.W.A. A.D.T. Protection

Entire project reported to cost over \$40,000.

Seattle, Wash.—Puget Sound Sheet Metal Works, 3631 E. Marginal Way, has approved plans for new 1-story plant, about 60 x 152 ft., at 6401 Airport Way, reported to cost close to \$50,000, with equipment. Work is scheduled to begin at once.

Bluefield, W. Va.—Esmond Mills, Inc., Esmond, R. I., manufacturer woolen blankets and cloth, etc., has acquired 2-story industrial building here, and will improve and equip for new branch mill. Machinery will be installed for employment of about 150 persons. Work will proceed at once.

Butler, Wis.—A. O. Smith Corp., 3533 N. 27th St., Milwaukee, Wis., manufacturer pressed steel products, has plans maturing for new branch plant on West Capital Dr., near line of C. & N.W.R.R., here, consisting of main 1-story building, 340 x 440 ft., and several auxiliary structures. It will be used for manufacture of airplane propellers for Government, and

is reported to cost over \$400,000, with financing provided by Defense Plant Corp., Washington, D. C., federal agency.

North Lake, Wis.—Inedible Rendering Co., recently organized, care of John Topzant, 424 E. Wells St., Milwaukee, Wis., has plans under way for new 2-story rendering plant here, where site has been acquired. It will be about 40 x 110 ft., reported to cost over \$40,000, with equipment. Bids are being asked.

Laramie, Wyo.—Monolith Portland Midwest Co., operating local cement mill, is concluding contract with Government for construction and operation of new plant on local site, soon to be selected, for production of alumina. It will comprise a large group of 1- and multi-story buildings, with power house, machine shop, administration building and miscellaneous structures. Cost about \$4,000,000, with financing to be provided by Defense Plant Corp., Washington, D. C., federal agency. Company is a subsidiary of Monolith Portland Cement Co., 215 W. 7th St., Los Angeles, Cal.

Two Western Carriers Coordinate Operations

Substantial savings in truck mileage will result from a joint action plan approved last month by ODT for the coordination of operations by two common motor carriers in transporting property between Seattle and other points in Washington. The plan became effective June 21.

Sunrise Trail, Inc., Walla Walla, Wash., and Consolidated Freightways, Inc., Portland, Ore., will eliminate duplicating pick-up and delivery services at Seattle, where Consolidated will perform such services for Sunrise without material increase in its own truck miles. This coordination will release three pick-up trucks.

The companies also will coordinate certain less-than-truckload operations between Seattle and Kennewick or Pasco, Wash., effecting an annual saving of 12,000 truck miles and resulting in more complete utilization of equipment.

COLUMBUS, OHIO

Member of O.W.A.

COLUMBUS WAREHOUSES, INC.

A COMPLETE MERCHANDISE DISTRIBUTION WAREHOUSE

MOST CENTRAL WAREHOUSE—BLOCKS OF
CENTER DOWNTOWN DISTRICT

POOL CAR DISTRIBUTION

PRIVATE SIDING AND SWITCH—N. Y. CENTRAL LINES

228 West Broad St., Columbus, Ohio



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Consign Your Household Goods Shipments to

DAN EDWARDS at COLUMBUS

Packing—Shipping—Storage—Local and Long Distance Moving—Steel
and Concrete Warehouse—Private SidingEDWARDS TRANSFER AND STORAGE CO.
430 North High St., Columbus, OhioMember—National Furniture Warehousemen's Association
Agent—Allied Van Lines, Inc.

COLUMBUS, OHIO

THE MERCHANDISE WAREHOUSE CO.

370 West Broad St.

Complete service for

MERCHANDISE STORAGE AND DISTRIBUTION

Private Siding NYC and Big Four

14 Car Capacity

Pool Car Distribution A.D.T. Service

Centrally Located Modern Facilities

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The NEILSTON STORAGE CO.

260 EAST NAGHTEN ST.

Modern warehouse for merchandise—Low
insurance—Central location in jobbing dis-
trict—Private railroad siding—Pool cars
distributed.

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WRIGHT TRANSFER & STORAGE CO.

126 OAK ST.

Est. 1904

Merchandise—Household Goods

Wright Service to Meet Your

Requirements

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WAGNERS SERVICE, INC.

Pennsylvania Railroad and Lowry Ave.

A warehouse service that embodies every
modern facility for the storage and distribu-
tion of Household Goods and Merchandise—
Motor Freight Service—Door to door delivery
at Dayton, Springfield and Columbus daily.

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CAPACITY

800—CARS COLD

400—CARS DRY

PRIVATE SIDINGS

N.Y.C. AND

B.&O. RR'S



GREAT LAKES TERMINAL WAREHOUSE CO.

321-359 MORRIS ST.

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COMPLETE WAREHOUSE FACILITIES

Member NATIONAL FURNITURE WAREHOUSEMEN'S ASSN.
Agent ALLIED VAN LINES, INC.

DIRECT FROM FREIGHT CARS

SHIPMENTS to Cleveland, consigned to
The Lincoln Storage Company over any
railroad entering the city, can be handled
from freight car direct to our loading plat-
form.Carload shipments to our private siding,
11201 Cedar Ave., on the N. Y. C. Belt
Line, connecting with all R.Rs. entering
Cleveland; L. C. L.-Penna. Euclid Ave. Sta.
adjoining Euclid Ave. warehouse; other
R.Rs. to Cleveland, Ohio.

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N. H. Thomas, Pres.

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CLEVELAND

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Action to Relieve Manpower Shortage Taken by WSA at West Coast Ports

A program designed to relieve the waterfront manpower shortage at Southern California ports was drafted at a conference of the Pacific Coast Maritime Industry Board of the War Shipping Administration, held at Long Beach, Cal., last month.

Action designed to relieve the manpower shortage and increase efficiency and production in the loading and discharge of ships was recommended for immediate inauguration, as follows:

A program of training key men, particularly of lift truck operators and winch drivers, among which the shortage is severe.

Appointment of two additional staff members to the board's personnel to inspect loading operations, dispatch available longshoremen, and recruit replacements.

Establishment of a system of reporting lost time during operations so that the board will have a formalized, factual record upon which to determine responsibility for delays, such reports to be made by the hatch tenders. (Herr)

Four Carriers Coordinate In Kansas and Missouri

A plan of joint action to coordinate operations among four common motor carriers operating between Kansas City, Missouri, and points in Kansas, designed to save truck mileage, manpower and equipment, was approved last month by ODT. The plan became effective June 15. It is estimated that the coordinated operations will save 120,000 truck-miles a year.

The four carriers are Topeka Transfer & Storage Co., Topeka, Kan.; Graham Ship-By-Truck Co., Kansas City, Mo.; Lawrence Transfer and Storage Co., Lawrence, Kan.; and Wheelock Bros., Inc., Kansas City, Mo. They will coordinate operations by diversions of certain less-than-truckload shipments and by the use of joint terminals.

Shortage of Longshoremen Serious in Los Angeles

An urgent need for more longshoremen to work the docks at Los Angeles Harbor if and when the war effort in the Pacific theater quickens was forecast by Paul Eliel, San Francisco, chairman of the Board of Pacific Coast Maritime Industries, at a two-day conference at Long Beach, Cal., recently, between board and representatives of the Waterfront Employers' Assn. and the International Longshoremen Union. Losses of Longshoremen personnel to the armed forces and rival war industries were blamed by Eliel. (Herr).

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STORE DOOR DELIVERY ARRANGED FOR

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U. S. Bonded—Concrete Building—A. D. T. Sprinkler System

Complete Facilities for Storage and Distribution
of All Commodities

Free Switching from All Railroads
New York, 271 Madison Ave.

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EST. 1913



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Storage in Transit Pool Car Distribution

Packing — Shipping — Hauling

Fireproof Furniture Storage

Members: Mayflower W.A.—P.F.W.A.—P.W.A.

70th ANNIVERSARY



The Cleveland Furniture Warehousemen's Assn. recently held a dinner to celebrate William R. Thomas' 70th birthday. Mr. Thomas has participated in activities of the association for many years and is at present a director of the Allied Van Lines, Inc.

Those present as shown in the picture are: standing l. to r.—David J. Heil, Windermere Storage Co.; Howard Gor-

bett, Knickerbocker Storage Co.; J. Briggs, Judson Freight Forwarding Co.; Ross Woodruff, Andrews Storage Co.; William Turner, Lincoln Storage Co.; Thomas Heil, Jr., Windermere Storage Co.; George Rutherford, Lincoln Storage Co.; Harold Brazina, Trans-Continental Freight Forwarding Co.; Joseph J. Heil, Windermere Storage Co.; Harry Blackburn, Lincoln Storage Co.; Rod Horlock,

National Carloading Co. Seated from l. to r.—E. R. Douglass, Andrews Cartage Co.; Eugene R. Heil, Windermere Storage Co.; William R. Thomas, Lincoln Storage Co.; Charles Armitage, Cuyahoga Van Operators' Assn.; Al Roddell, Universal Carloading Co., and Elmer Becker, Becker Storage Co. Present but not in the picture, Harry Harmon, Bramley Storage Co.

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

D and W, July, 1943—113

NEW PLAN TO CURB ABSENTEEISM TRIED BY PHILADELPHIA CARRIERS

PHILADELPHIA—In an effort to curb absenteeism and lateness, the Philadelphia Labor-Management Committee of the Motor Transport Industry (which also includes warehousing representatives) early in June inaugurated a Merit Award plan.

Under the plan gold-plated sterling pins, bearing the inscription "essential war worker," will be awarded to any employee not late or absent for a period of one month. The pin must be forfeited if, in any future month, the employee was late or absent a given number of times. The pin is also forfeited if the employee leaves the service within the year, with the understanding it will be returned to him if service is resumed. The pin becomes the property of the employee if won a total of 12 times, not necessarily in consecutive order.

Lateness is defined as not more than 60 minutes for a 30-day period. Late periods per day are compiled for the month, and all late time is included except such lateness as is incurred due to transportation tie-up of passenger carrying facilities.

Absence is defined as absence from work on Saturdays, Mondays, or day fol-

lowing a pay-day or holiday, unless caused by the sickness or disability of the employee, or an immediate member of his family requiring his attendance, and certified by a physician, or death in the immediate family. Absence on any day other than those listed above is not considered a violation if the employee can offer a reasonable excuse.

Approximately 75 companies, representing over 3000 employees, are already participating in the plan. Although it is too soon to compute accurate results H. E. Boysen, secretary of the committee and originator of the plan, states it is already operating smoothly and all signs indicate it will be effective. OPT officials and several firms in other cities who have been advised of the plan are interestedly awaiting developments with a view toward spreading the system, if proved successful, it is said. (Dash)

Navy Has Openings For Warehousemen

The Navy has openings for men between 28 and 49 years of age, who have important experience in the handling of

large quantities of stocks, to qualify as commissioned officers. Candidates must have had three or more years of experience in a responsible supervisory capacity in this field. They must know all types of handling problems including the actual use of the Fork Truck Pallet System, and have experience in the use of tractors, trailers, conveyors, cranes and other related equipment.

A college education is desirable. Education and practical experience in a mechanical field are also desirable. Candidates should have served as department heads or executives in charge of this work.

Successful applicants may qualify as commissioned officers in charge, or as assistants in charge of handling large volumes of supplies at naval bases and supply depots. Apply at the nearest Office of Naval Officer Procurement located in each of the major cities.

NEW PA. RUBBER PLANT

The Publicker Commercial Alcohol Co., Philadelphia, has purchased 115 acres near Bristol, Pa., as the site for a butadiene-production plant. Charles L. Gabriel, vice president, has announced the plant will be ready for production by the end of the year. (Dash)

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LANCASTER STORAGE CO.

LANCASTER, PA.

Merchandise Storage, Household Goods, Transferring, Forwarding
Manufacturers' Distributors, Carload Distribution, Local and Long Distance Moving
Member of May.W.A.

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Pool Car Distribution a Specialty

FENTON STORAGE CO.

Absolutely Fireproof 46th and Girard Ave.

Cable Address "Fence"

P. R.R. Siding

Storage, moving and distribution of household goods and merchandise

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Agent for Allied Van Lines, Inc.



Bus type vans for speedy delivery anywhere. We distribute pool cars of household goods. Prompt remittance.

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Established 1865

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Merchandise Storage Storage in Transit
Direct Sidings-Penna. R.R. and Reading R.R.
Pool Car Distribution
Represented by Associated Warehouses, Inc.
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2,100,000 Square Feet

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11 modern buildings in leading business sections. Served by all R.R.'s. Loading and unloading under cover. Storage-in-transit privileges. Goods of all kinds, bonded and free.

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GOODS SERVICE

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-serving PHILADELPHIA AND VICINITY with Economy and Dispatch!

Strategically located throughout Philadelphia, they provide more than 68 acres of excellent storage space.

Each building is equipped with every convenience, designed for the safe, prompt and economical handling of goods of every kind. All earn low insurance

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Served by both Pennsylvania Railroad and the Reading Company. Convenient to the big piers. Completely equipped pool car department is maintained.

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A complete set-up to meet and improve your Philadelphia storage and distribution problems, with war-time economy. Full details on request.

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2 WAREHOUSES 17th AND SMALLMAN STS. 13th AND SMALLMAN STS. QUARTER MILLION FEET OF SPACE

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STORAGE IN TRANSIT
POOL CAR DISTRIBUTION
COMPLETE TRUCKING FACILITIES
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Established 1918

WHITE TERMINAL COMPANY

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PITTSBURGH, PA.

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Office: Duquesne Way and Barbeau St.
Merchandise Storage & Distribution

Members A. W. A.

PITTSBURGH, PA.

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DRAYMAN & STORAGE WAREHOUSE

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HOUSEHOLD STORAGE POOL CARS
MERCHANDISE STORAGE PACKING
LOCAL AND LONG DISTANCE MOVING
PRIVATE SIDING, D. L. & W. R. R.

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THE QUACKENBUSH WAREHOUSE CO.

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2 Warehouses with private sidings on Erie & P. RR's
reciprocal switching. Loans on Stored Commodities.
Cold Storage for furs—Cold storage lockers—Quick Freeze
space.

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LONG DISTANCE MOVING

Private Siding B. & O. R.R.

WILKES-BARRE, PA.

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General Storage and Distribution

Prompt and Efficient Service

12 Car Track Located on Lehigh Valley RR. Switches

Storage-in-Transit and Pool Cars

19 New Bennett St.

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FIREPROOF BUILDING—416 FRANKLIN STREET

P. R. R. SIDING

MERCHANDISE STORAGE AND DISTRIBUTION

HOUSEHOLD GOODS—DRAYAGE

IDEAL DISTRIBUTING POINT FOR CENTRAL PENNSYLVANIA

**Vast Aviation Growth Due
After War, Survey Finds**

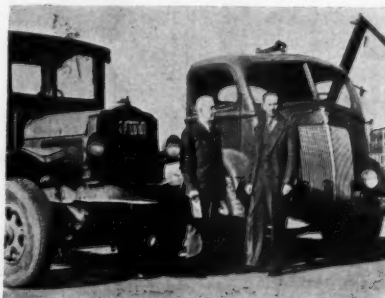
A study designed to "appraise the factors now affecting aviation, to attempt to discover what this growing field is likely to be at the end of the war, and to suggest what it needs to improve its position as one of the major divisions of the basic transportation system of the United States and of the entire world" has been issued by the Commercial Research Division of The Curtis Publishing Co., Philadelphia.

Saying that the aviation industry "had been on the point of realizing its potentialities as an earner of business profits," when war came, this study traces the development since the first flight by the Wright Brothers, presents facts, charts and figures, and concludes with a hopeful outlook for the continued development in manufacturing, air mail, commercial lines, air express, air freight, the private plane and military construction.

"Aviation is the means of opening new opportunities for the application of human endeavor. It is a means of widening the mental horizons of all people and of raising the standard of living of the world," the report states.

116—D and W, July, 1943

TRUCK DEAL



The Union Oil Co., Los Angeles, Cal., recently traded in a 1919 Model No. 40 White truck after 24 years of steady service in the company's oil well area. A new, modern Model No. 820 White was purchased to take its place.

Delivery of the new unit was made an occasion by Gene Etzler, White salesman handling the Union account, and James Knabb, Union's automotive supervisor for the southern district. Etzler has been with White in the coast area for 20 years, and Knabb with Union for 25 years. Thus the old and new vehicles mean something to both.

The two men are shown in the accompanying photo, standing in front of the old and new units, both of which are equipped with winch and oil well puller.

For Shippers' Convenience, States, Cities and Firms are Arranged Alphabetically

**Appeals Now Possible
From Export Taboos**

A system of appeals by exporters from lists of prescribed articles published by Latin-American countries as ineligible for import recommendations under the current decentralization of export controls has been instituted by the Board of Economic Warfare.

Under it, the lists will remain in effect, but any exporter who has ordered such banned goods and stands to lose money by being unable to gain clearance to move them because of the lists of non-wanted items, may appeal to BEW for a license to ship despite the ban.

At the same time, BEW officials said the cancellation of general licenses to Latin-American countries, slated to have been effective as to all commodities June 1, was in a sort of escrow, subject to an informal appeal. In other words, the Chicago Journal of Commerce states, the board will not let any shipper lose money on goods obtained for export on bona fide orders through the June 1 general license cancellation.

Supreme Court to Decide S. F. Terminal Jurisdiction

It is now up to the Supreme Court of the United States to decide who has jurisdiction over the Port of San Francisco and other Bay area terminals. It may be remembered that, following lengthy hearings into alleged "irregularities," the United States Maritime Commission claimed jurisdiction and laid down certain rules affecting Bay area terminals. The terminals in question deny that the USMC has the right to assume jurisdiction over them. At re-hearings, the assumed right of the commission was upheld. The terminals then asked the Supreme Court to review.

(Note: Previous references to this matter appeared in *D and W* in Feb. and Nov., 1940, and in April and Oct., 1942). In its request for a review of the case, the State of California, through the Board of State Harbor Commissioners, claims that the commission does not have the jurisdiction over the operations of the facilities of the terminal of the City of San Francisco, that the State is sole owner of the facilities and the commission has no power to regulate rates, etc. Oakland's Board of Port Commissioners, and the Commissioners of the Port of Stockton, participate in the plea to the highest court.

Harbor Commissioner Joseph F. Marias pointed out to *D and W*: "Other ports of the United States recognize that this

Sisal Experiments Conducted by WPB

Results to date of experiences in conservation in the cordage industry were reviewed recently at a meeting of the Cordage Industry Advisory Committee and WPB officials.

The industry reported several successful experiments in the conservation of sisal, which is critically needed for military uses. Under one method, certain grades of istle may be mixed with sisal to make a rope previously made entirely of sisal. Another substitute for all sisal cordage now being considered is a rope in which the center yarns are made of jute and those on the surface from sisal.

A report from the Industry Technical Committee, which has been working on the problem of processing American hemp, revealed that while existing machinery had been adequate and capable of meeting requirements in the past, the greatly increased quantity of hemp to be grown in this country in 1943 necessitates some rebuilding of existing machinery in order that the hemp may be fully utilized in meeting essential military and civilian demands.

is a test case, and are interested in the outcome." These other ports will enter appearance, Marias believes. The case is on the Court's fall term calendar. (Gidlow)

Tax Repeal Vetoed In California

California truck owners have lost their fight for repeal of the 3% gross receipts tax. After a strong fight which got the repeal measure as far as the Governor's desk, Governor Earl Warren finally refused to sign it.

Operators are disappointed in the outcome because they say it means an increase in rates. They sought the repeal of the tax for a two-year period as one means of reducing their overhead under current difficult conditions. Roy Thompson, secretary-manager of the Truck Owners' Assn. of California, says: "Operators are going to have to get increased rates or they will not be able to haul agricultural crops."

A large crop of tomatoes, peaches and pears will soon start to ripen. The two latter fruits will start to move to canneries about July 25, with about 500,000 tons of the two to be carried. The latter part of August will see 800,000 tons of tomatoes starting to ripen with crops coming along through October. This figure is for movement to processors only. Industry leaders say there is definitely not enough equipment to handle this tonnage since so much has been diverted to Army and other transportation, and non-agricultural movements are more profitable. (Gidlow)

PROVIDENCE, R. I.

CADY MOVING & STORAGE CO.

80-90 Dudley St.

FIREPROOF WAREHOUSE

Storage, Moving, Shipping

Fleet of Long Distance Moving Vans

Member National Furniture Warehousemen's Assn.

Agent for Allied Van Lines, Inc.

PROVIDENCE, R. I.

Terminal Warehouse Company of R. I., Inc.

storage all kinds of General Merchandise, Pool Car Distribution. Lowest Insurance.

Trackage facilities 50 cars. Dockage facilities on deep water.

Shipping directions South Providence, R. I.

CHARLESTON, S. C.

Charleston Warehouse and Forwarding Corp.

Merchandise Storage and
Distribution of Pool Cars

Modern Concrete Warehouse. 100,000 Square Feet of Storage Space.
Private Tracks Connecting with All Railroad and Steamship Lines.
Motor Truck Service.

Member of the American Chain of Warehouses, Inc.

COLUMBIA, S. C.

Distribution Center of South Carolina

CAROLINA BONDED STORAGE CO.

Est. 1928

General merchandise and household goods storage.

Pool Car Distribution. Private rail sidings.
Sprinkler equipped warehouse.

GREENVILLE, S. C.

TEXTILE WAREHOUSE CO.

Est. 1923

511-13-15 Rhett St.

GENERAL MERCHANDISE—H.H.C. STORAGE

Pool Car Distribution—Motor Truck Service

Low Insurance Rate

Private Siding

SIOUX FALLS, S. D.

WILSON STORAGE AND TRANSFER CO.

110 NO. REED ST.

Investment

\$350,000

State Bonded

80,000 Sq. Ft.

Floorspace

Fireproof, sprinklered building with private siding on the C&NW.
Labeling and Sorting. Distribution of Pool Cars. Household Goods Transferred. Refrigerated Truck Service.
Owners and operators of Wilson Forwarding Co.
Members of NFWA—MinnNWA—AWAM
Agent for AVL

KNOXVILLE, TENN.

FIREPROOF STORAGE & VAN COMPANY, Inc.

201-211 Randolph St., Knoxville, Tennessee

135,000 square feet on Southern Railway tracks.

Equipped with Automatic Sprinkler

Insurance at 12c. per \$100.00

per annum.

Pool Cars distributed.

Household goods shipments solicited. Prompt remittances made.

MEMBERS American Warehousemen's Ass'n

PROMPT AND EFFICIENT SERVICE

MEMPHIS, TENN.

S. S. DENT, Owner

General Warehouse Co.

421 So. Main St.

"Good housekeeping, accurate records, Personal Service"

Located in the center of the Jobbing & Wholesale District

Sprinklered

Private R. R. siding

Low Insurance

Perfect service

TENNESSEE—TEXAS

MEMPHIS, TENN.

Benton T. Grills, Sec'y. & Mgr.

NICKEY WAREHOUSES, INC.

"Memphis Most Modern Warehouses"

285-305 West Trigg Ave.

Merchandise Storage & Pool Car Distribution
Local Delivery Service

A.D.T. Burglar and Sprinkler Supervisory Service, Illinois Central, Frisco & Mo.
Pac. Private rail siding & car spot.

MEMPHIS, TENN.

W. H. DEARING, General Manager

John H. Poston Storage Warehouses

ESTABLISHED 1894

671 to 679 South Main St.

Insurance Rate \$1.20 per \$1,000 per Annum Distribution a Specialty.

Merchandise storage, dependable service, free switching, Local cartage delivery,
Illinois Central and Cotton Belt Railway tracks, Automatic sprinkler, A.D.T. watchmen.

MEMPHIS, TENN.

H. K. HOUSTON, Pres. P. D. HOUSTON, V.P.

UNITED WAREHOUSE & TERMINAL CORP.

Warehouse No. 1

Warehouse No. 2

137 E. Calhoun Ave.

138-40 St. Paul Ave.

Memphis, Tennessee

Storage (Mdsa.)—Pool Car Distribution—Local delivery service—Office Space.
In the heart of the wholesale district and convenient to Rail, Truck and express
terminals. Eight car railroad siding—(N.C.&ST.L. and L.&N.)—Reciprocal switch-
ing. Represented by Distribution Service, Inc. Member of A.W.A. and M.W.A.

NASHVILLE, TENN.

124 FIRST AVE. N.

BOND, CHADWELL CO.

MERCHANDISE
WAREHOUSE.
RAIL, TRUCK
AND RIVER
TERMINAL.



NASHVILLE, TENN.

521 Eighth Ave., So.

Central Van & Storage Co.

MERCANTILE AND HOUSEHOLD STORAGE

WAREHOUSE STOCK and POOL CAR DISTRIBUTION

Automatic Sprinkler System—Centrally Located

NASHVILLE, TENN.

Nashville Warehousing Co.

P.O. Box 555

GENERAL STORAGE

POOL CAR DISTRIBUTION

FREE SWITCHING—CITY TRUCKING

NASHVILLE, TENN.

ESTABLISHED 1886

THE PRICE-BASS CO.

194-204 Hermitage Ave., Nashville 2

STORAGE

Automatic Sprinklered—Spot Stock and Pool Car Distri-
bution—Private Siding



BEAUMONT, TEXAS

TEXAS STORAGE COMPANY

656 Neches St.

Beaumont, Texas

Merchandise and Household Goods
Warehouse, Concrete Construction
30,000 Sq. Ft. Distribution of Pool Cars
Transfer Household Goods

Agent for A.V.L. Member of N.F.W.A.—S.W.A.T.A.



Pointers Given Warehousemen On Use of Priorities

Recent bulletin issued by New Jersey Furniture Warehousemen's Assn., reporting talk given by Thomas Nevins, chief, Priorities Section, OPA, Newark, N. J. cites following important pointers:

"Parts for trucks and for buildings and equipment necessary to maintenance, upkeep and general working conditions may be obtained if proper order is used. Improvements or new equipment are not included. Operating supplies and everything needed for use are obtainable. Small tools may be bought. Minor capital additions not costing over \$500 may be made. All this under M. R. O. rules. The symbol M. R. O. should be used on all orders.

"Elevator repairs, electrical fixtures, power saws may be had under C. M. P. Regulation No. 5.

"Fabricated containers are not obtainable. Warehouses with packing equipment can be classed as box or crate manufacturers. Keep this in mind. It is important when applying for materials.

"Warehouses are actually in a high preference class according to the speaker. Classed as Public Warehouses under Schedule A. A. 2 C. M. P. Regulation No. 5, we are next to highest rating. Keep this in mind also. A. A. 2 is of almost same value as A. A. 1. Use

A. A. 2 when applying for priorities. For nails metal strapping use C. M. P. 4 B and be satisfied with \$10 worth or less. For lumber P. D. 1A. Cartons, barrels, boxes, P. 140.

"Nails are more important than the lumber in the crates they hold together. While ratings for containers are not obtainable it is OK to buy them if the dealer will sell."

Tacoma Firms Divide Business for Conservation

Centralization of considerable storage business in Tacoma, Wash., has been made possible through a recent reorganization of large transfer and storage interests of the Puget Sound community, now in the midst of new distribution and warehousing problems brought about through the war and wartime production in this critical manpower area.

By the terms of a joint transaction, between McLean's Storage, and Lyon Van and Storage Co., on the one hand, and the Inter-City Auto Freight, and Inter-City Co. on the other, the latter firms have acquired all the commercial hauling and storage business, together with the trucks and other equipment of the McLean and Lyon companies, while the McLean and Lyon interests have taken over all the furniture and household goods, hauling and storage business of the Inter-City organization. Head-

quarters are being consolidated and maintained in Tacoma.

As announced, McLean will devote its efforts entirely to moving, storage and packing of household goods and equipment. McLean's fleet of vans will continue to operate in affiliation with the Allied Van Lines and Lyon Van and Storage Co. Inter-City Auto Freight Inc. will concentrate its efforts on the handling of commercial trucking and heavy machinery moving, taking over McLean's activities in this field.

McLean's, operating on a nation-wide moving basis, has maintained headquarters at 109 South 15th St., Tacoma, and the Inter-City Auto Freight Inc., at 300 Puyallup Ave., in that city. The new arrangement and consolidation has been designed to cooperate with the war agencies and distribution demands more fully,—enabling both firms to conserve equipment, tires, and fuel in accordance with orders of ODT.

TO MAKE HELICOPTERS

The Sikorsky division of the United Aircraft Corp. announced today that it has acquired the Crane Co. plant at Bridgeport, Conn., for the manufacture of helicopters, and an adjoining tract of land to be used as an airport for this type of airplane.

CORPUS CHRISTI, TEXAS

CORPUS CHRISTI WAREHOUSE AND STORAGE COMPANY

Located AT PORT SITE
adjacent to docks NAVIGATION DISTRICT NO. 1
Storage Distribution Drayage
MERCHANDISE EXCLUSIVELY
96,400 Sq. Ft. Sprinklered Low Insurance Rates
Member: Southwest Warehouse and Transfermen's Ass'n

CORPUS CHRISTI, TEXAS

Robinson Warehouse & Storage Co.

General Offices: 1500 N. Broadway, Corpus Christi

Specialists in

General Merchandise Storage—Pool Car Distribution

Public Bonded Warehouses at Alice, Corpus Christi, Harlingen and Victoria . . .
Daily and overnight common carrier Motor Freight Service to Houston, San Antonio, Austin, Laredo and Rio Grande Valley, serving all intermediate points.
Expert Handling: Inquiries Invited.

DALLAS, TEXAS

In Dallas It's Binyon-O'Keefe

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION
Our modern Centrally located fireproof warehouse is completely equipped to serve you with over 75000 square feet of merchandise & household goods storage space.
MOVING—STORAGE—PACKING—SHIPPING



Since 1875

BINYON-O'KEEFE
Fireproof Storage Co.
Dallas

Since 1875



Associated with Distribution Service, Inc.

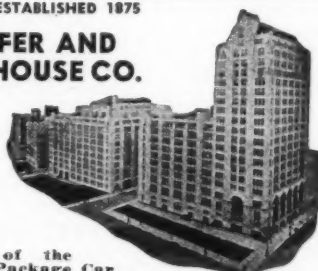
DALLAS, TEXAS

ESTABLISHED 1875

DALLAS TRANSFER AND TERMINAL WAREHOUSE CO.

Second Unit Santa Fe Building, Dallas, Texas

Modern Fireproof Construction—Office, Display, Manufacturers, and Warehouse Space



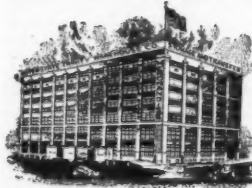
Operators of the Lone Star Package Car Company (Dallas and Fort Worth Divisions)
H. & N. T. Motor Freight Line
Agents for Allied Van Lines, Inc.
A.W.A., N.P.W.A., American Chain of Warehouses
MEMBERS Southwest Warehouse & Transfermen's Assn., Rotary Club



DALLAS, TEXAS

INTERSTATE-TRINITY WAREHOUSE COMPANY

301 North Market St., Dallas



Merchandise Storage and Distribution

Household Goods Storage, Moving & Packing

Long Distance Hauling

R. E. ABERNATHY, Pres.
J. H. CHILES, Vice-Pres.

Represented by
NEW YORK ALLIED DISTRIBUTION INC. CHICAGO
11 WEST 42ND ST. PENN. 6-0967 1525 NEWBERRY AVE. MON.5531

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SPECIALIZING

MERCHANDISE STORAGE
POOL-CAR DISTRIBUTION

SERVING THE GREAT SOUTHWEST AREA

EVERY ACCOUNT IS PERSONALLY SUPERVISED BY THE MANAGEMENT



KOON-McNATT STORAGE & TRANSFER CO.
1100 CADIZ ST.

CONTRACT OPERATORS FOR ALL RAIL LINES AND UNIVERSAL CARLOADING & DISTRIBUTING COMPANY

Over 10,000,000 Pounds of Freight Handled Monthly for Dallas Shippers

EL PASO, TEXAS

"Bankers of Merchandise"
"Service With Security"

International Warehouse Co., Inc.

1601 Magoffin Ave. El Paso, Texas



Lowest Content Insurance Rate
Fireproof Storage of Household Goods, Autos & Merchandise. State and Customs Bonded.
Private Trackage—T. & P. and So. Pac. Rys.
Pool Car Distribution—Motor Truck Service.
Incorporated in 1920
Members—NFWA—SWTA—Agent for Allied Van Lines, Inc.

FORT WORTH, TEXAS

In Fort Worth It's Binyon-O'Keefe

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION
Our modern Centrally located fireproof warehouse is completely equipped to serve you with over 90,000 square feet of merchandise & household goods storage space.
MOVING—STORAGE—PACKING—SHIPPING



Since 1875

BINYON-O'KEEFE
Fireproof Storage Co.
Fort Worth

Since 1875



Associated with Distribution Service, Inc.

FORT WORTH, TEXAS

Agents—ALLIED VAN LINES, INC.

Storage, Cartage, Pool Car Distribution



O. K. Warehouse Co., Inc.

255 W. 15th St., Fort Worth, Tex.



HOUSTON, TEXAS

BINYON-STRICKLAND WAREHOUSES, INC.

Merchandise Storage — Pool Car Distribution
Centrally Located — Lowest Insurance Rate
Private Siding Southern Pacific Ry. Co.
Goliad & Morin Sts. Houston

HOUSTON, TEXAS

FEDERAL WAREHOUSE COMPANY

915 N. San Jacinto St. Houston, Texas

General Merchandise Storage

Pool Car Service

Fireproof Sprinklered Warehouses

Located in the heart of the wholesale district

HOUSTON, TEXAS

Better Warehousing in HOUSTON

We operate a modern low insurance rate warehouse in the center of the wholesale, jobber, rail and truck terminal district. Most conveniently located for interior jobbers' trucks; well trained personnel; cooler space.

HOUSTON CENTRAL WAREHOUSE CO.
Commerce and San Jacinto Houston, Texas

Represented by
NEW YORK ALLIED DISTRIBUTION INC. CHICAGO
11 WEST 42ND ST. PENN. 6-0967 1525 NEWBERRY AVE. MON.5531

DALLAS, TEX.

Warehouses—FT. WORTH—DALLAS

TEXAS AND PACIFIC TERMINAL WAREHOUSE CO.

MERCHANDISE STORAGE—POOL CAR DISTRIBUTION

Sprinklered A. D. T. Supervised

Cooler Rooms

Enclosed Parking lot for Customers' Automobiles and Trucks

Member S.W.A.

LOW INSURANCE RATES

Integrated Transportation System For Post-War Advocated

**Only way to avoid government ownership
and make shipping more efficient
and economical, Pettengill says.**

UNLESS the development of transportation systems, as distinguished from truck or rail companies, is encouraged, government ownership in the post-war period can scarcely be avoided, Samuel B. Pettengill, vice-president and general counsel, Transportation Assn. of America, declared, in an address before Central Motor Freight Assn. in Chicago, recently.

The necessity for victory, said Mr. Pettengill, a former Indiana Congressman and one of the authors of the Motor Carrier Act of 1935, is integrating train, truck, boat and pipe lines into a unified transport system. This formula for war, he contended, "seems to be the best for peace, as well."

An integrated system, he added, would be regulated by the ICC, to preserve competition between systems, fair rates

and earnings sufficient to attract private investment. Elimination of red-ink operations, he suggested, would not only improve financial standing of the companies but tend toward constantly reduced shipping costs and thus benefit every American.

"The division between truck, train, boat or airplane," he said, "should be based on performance and price alone. The time has passed for one transport agency to win over another by its finesse in legislative committee rooms. The public is entitled to most and best for least. Artificial featherbeds and legal handcuffs for competitors mean mass unemployment and that, too long continued, means American Hitlers. We must get our economy down to earth. The post-war world is going to be too tough for stilt-walkers."

Pettengill demanded, also, a more favorable attitude on the part of government toward highway transportation.

"The trucking industry does not deserve to become the forgotten hero of the war," he continued. "It has rendered a magnificent service in moving the largest volume of goods under the greatest difficulties it has ever faced. Yet, despite increased volume, the industry as a whole, is operating with little or no profit. At a time when transportation facilities are under great strain to move supplies to the front, 200,000 trucks have stopped rolling, due to manpower difficulties, shortage of repair parts, rubber, rising costs and taxes.

"Part of the difficulty is due to the fact that there are people in Washington who seem intent on promoting a social revolution behind the smoke screen of

HOUSTON, TEXAS

Houston Terminal Warehouse & Cold Storage Company

General Storage Cold Storage U. S. Custom Bonded
A. D. T. Service Pool Car Distribution
Office Space Display Space Parking Space
Lowest Insurance Rate

New York Representative
Phone PLaza 3-1235

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HOUSTON, TEXAS

W. E. FAIN, Owner and Manager
Established 1901

TEXAS WAREHOUSE COMPANY

Forty-two Years
Under Same Continuous Management

MERCHANDISE EXCLUSIVELY
Pool Car Distribution Sprinklered Throughout
A.D.T. Supervised Service

HOUSTON, TEXAS

PATRICK TRANSFER & STORAGE CO.

Merchandise and Household Goods Storage
Pool Car Distribution

Sprinklered—A.D.T. Watchmen
Shipside and Uptown Warehouses
Operators—Houston Division
Lone Star Package Car Co.

1117 Vine St. Agents for Allied Van Lines, Inc.

Members N. F. W. A.
State and Local Assn.

HOUSTON, TEXAS

Agent for Allied Van Lines, Inc.

UNION Transfer & Storage Co.

1113 Vine St. P.O. Box 305

Forwarding and Distributing

MERCHANDISE STORAGE

Warehouse Sprinklered Throughout
Supervised by A.D.T. Service.

SERVICE THAT COUNTS

HOUSTON, TEXAS

SOUTHERN WAREHOUSE CORPORATION

Bonded Warehouse

General Merchandise Storage

Pool Car Service A.D.T. Supervised Ser.
Sprinklered Low Insurance Rate
Centrally Located Private Siding on Southern
Pacific Ry. Co.

4410 Clinton Drive

Houston, Texas

HOUSTON, TEXAS

UNIVERSAL TERMINAL WAREHOUSE CO.

Merchandise Storage — Pool Car Distribution

Sprinklered—A.D.T. Watchmen

— U. S. Customs Bonded —

— Office Space —

New York Representatives:
DISTRIBUTION SERVICE, INC.
2 Broadway

Chicago Representatives:
DISTRIBUTION SERVICE, INC.
219 E. North Water St.

Members A.W.A. and State and Local Associations.

HOUSTON, TEXAS

MERCHANDISE DISTRIBUTION

COMMERCIAL STORAGE—
OFFICE SPACE — PARKING SPACE

T. P. C. STORAGE & TRANSFER CO., INC.

2301 Commerce Ave.

HOUSTON, TEXAS

BENJ. S. HURWITZ, Pres.

WESTHEIMER

Transfer and Storage Co., Inc.

OVER 50 YEARS IN HOUSTON

Firesproof Warehouses

Merchandise & Household Goods Storage—Pool Car Distribution—
Lift Van Service—25 car lengths of trackage.

Agents for Allied Van Lines, Inc.

Members N. F. W. A.
State and Local Assn.

SAN ANTONIO, TEXAS

MERCHANTS Merchandise Household Goods
TRANSFER & STORAGE CO.
 Complete Storage and Distribution Service
over 50 years of satisfactory service
 Member of A.W.A.—N.F.W.A.—S.W.A.

TYLER, TEXAS

Tyler Warehouse and Storage Company
 Bonded under the Laws of Texas
 General Storage and Distribution from the Center of East Texas. Specializing in Pool Cars Merchandise.

SAN ANTONIO, TEXAS

Muegge-Jenull Warehouse Co.
BONDED FIREPROOF
POOL CAR DISTRIBUTORS
STORAGE AND DRAYAGE
Dependable Service Since 1913

OGDEN, UTAH

MEMBER OF A.W.A.
WESTERN GATEWAY STORAGE CO.
 GENERAL WAREHOUSING
 POOL CAR DISTRIBUTION
 MERCHANDISE AND COLD STORAGE

SAN ANTONIO, TEXAS

Agent for Allied Van Lines, Inc.

Scobey Fireproof Storage Co.
 HOUSEHOLD - MERCHANDISE - COLD STORAGE - CARTAGE.
DISTRIBUTION
INSURANCE RATE - - - 10c
Members of 4 Leading Associations



SALT LAKE CITY, UTAH

CENTRAL WAREHOUSE
Fireproof Sprinklered
 Insurance rate 18c. Merchandise Storage. Pool Car Distribution.
 Office Facilities.
 Member A. W. A.



SAN ANTONIO, TEXAS

MEMBER
SOUTHERN TRANSFER & STORAGE CO.
Specialists in Merchandise Distribution
FIREPROOF BONDED STORAGE
 Represented by
 NEW YORK ALLIED DISTRIBUTION INC. CHICAGO
 11 WEST 42ND ST. NEW YORK 36-0068 1523 NEWBURG AVE. MON-5531



SALT LAKE CITY, UTAH

Merchandise Storage and Distribution
 Over 1,000,000 cubic feet reinforced Concrete Sprinklered Space
 Insurance Rate 11 Cents
CORNWALL WAREHOUSE CO.
 Salt Lake City, Utah
 Represented by
DISTRIBUTION SERVICE, INC.
 New York—Chicago—San Francisco



war. They are using the war to redistribute the diminishing wealth of the nation. But it should be plain that you can't forever squeeze industry between fixed ceilings and rising floors and win either the war or an American peace."

In the case of a regulated industry, he contended, the same commission that fixes rates should also have the responsibility of fixing costs, whereas, in fact, labor costs are fixed by one agency, rates by another.

"For war and post-war we should continue the integration or coordination of transport facilities now in process, not by any hard and fast rule fixed by a Washington bureau, but by management in the field. Trains engage in red-ink operations which trucks should handle at a profit, and vice versa. The shipper is not interested in the question whether goods move by truck or train. He wants them to go forward by whatever agency will move them cheapest and fastest." (Slawson)

OHIO INCORPORATION

Midwest Terminal and Warehouse Co., Columbus, O., has been incorporated for \$20,050, principals being I. W. Garek, Justin L. Sillman, and C. C. Crabbe. The firm of Crabbe, Garek & Sillman, handled legal details and represented the incorporators. (Kline)

Materials Handling—
Essential Naval Activity

(Continued from page 19)

ment both fixed and mobile, in warehouses and storage yards, on piers and wharves, in ship construction yards and aboard ship, as well as on barren shores in all parts of the world.

Since sufficient personnel with qualifications to do the entire job is not available the educational program of the Materials Handling and Containers Section must be able to reach men at all levels of intelligence, both among civilian and officer personnel, from the man who handles a hand truck to the most complicated machine operator. The program is underway; personnel is being assembled; trainees are already in the field of operations; and new men are continually being developed for replacement and expansion.

● The Bettar Ice Cream Co., with main plant at 45 South Catherine St., Baltimore, Md., and branch plant at Washington, D. C., has opened a branch distribution plant at Petersburg, Va. Shipments of finished ice cream are shipped by truck from Baltimore and by earload to Petersburg. (Ignace)

Washington Warehousemen
Divide Into Two Groups

The Washington State Warehousemen's Assn., meeting at the Davenport Hotel, Spokane, Wash., recently elected officers to serve both divisions after it was decided to divide into two groups to serve better the interests of household furniture and merchandise storage.

A. E. Hullin, Seattle, was elected president and A. C. MacNulty, Spokane, vice-president. W. G. Dickinson, Seattle, is secretary-treasurer. The following directors were elected: A. F. Bell, R. G. Culbertson, J. R. Goodfellow; S. C. Horner, Howard Shield, Malcolm C. Taylor, Claude Bekins and Don Hedloff, Seattle; Matt Newell and Locke McLean, Tacoma; Chick Verd, Yakima; Fergus Cambern, Spokane.

The changing of the association into two divisions, merchandise and household goods, in order to arrive at a better working plan, was the most important action taken at the meeting. Each division will conduct its own affairs.

Harlen E. Reynolds, district supervisor, ICC and allocation officer ODT, told the members there will be no more new trucks available, and also told them the Alaskan highway was constructed by using old trucks. (Haskell)

Lake Erie Ferry Service To Save Tire Mileage

A Lake Erie ferry service for truck-trailers which is designed to save manpower, equipment, and more than 325,000 commercial tire miles a day and lift part of the burden on hard-pressed truckers operating in the Detroit and Cleveland areas is now open.

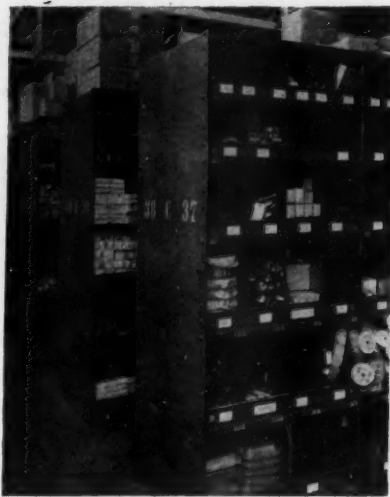
In announcing the new arrangement, ODT officials called attention to embargoes which large interstate common motor carriers have been forced to apply to part of the heavy volume of traffic moving into and out of Detroit during the past 90 days. Operation of the trailer ferry service should make additional manpower and equipment available to relieve the burden on both shippers and carriers of vital war materials in these areas, the ODT said.

How to Ship By Air Express

"How to Ship by Air Express During Wartime," an indexed handbook in file form on the "who, what, where, when and how of fastest way shipping," has just been issued by the Air Express Division of Railway Express Agency.

The handbook states that practically anything can go by air except inflammables, explosives and livestock. It gives

REPLACEMENT PARTS



... Adequate stocks of replacement parts cannot be maintained unless conservation steps are taken. Keeping the bins full is a responsibility we all must share.

valuable information about size and weight of packages, priorities, extra ser-

vices, etc., and includes a map of the United States showing flying times, air routes, etc.

Copies of the handbook will be mailed without cost to those who desire copies by the Air Express Division of Railway Express Agency.

ODT Switches from Wood To All-Steel Barges

A fleet of 168 all-steel petroleum tank barges, with a total carrying capacity of 1,600,000 bbl., will be constructed immediately for operation on the Mississippi and Ohio Rivers, ODT has announced.

The all-steel welded barges have replaced 195 wooden ones on the program authorized last Dec. It is expected that many of the steel boats will be ready for service by late Oct., when the 21 river towboats which will haul them are scheduled for delivery.

ODT said work is progressing well, on the waterway equipment intended to increase the transportation of oil to the Eastern Seaboard. Actual construction is under the direction of the U. S. Army Engineers and the Inland Waterway Corp. Other changes in the program include abandonment of plans for a water-rail trans-shipment terminal at Olmsted, near Cairo, Ill., and reduction of the number of steel dry-cargo barges.

SALT LAKE CITY, UTAH

Storage—Pool Car Distribution

KEYSER MOVING AND STORAGE CO.

Est. 328 West 2nd South 1910

72,000 sq. ft. space. Reinforced concrete and brick. Dignified, accessible, and central location. U.P. spur with free switching from or to other lines. P-U&D service rail or truck. Systematic delivery service twice daily. 90% Co-Ins. rate 10¢ per \$100.00. A.D.T. automatic burglar and fire protection. Office and desk space available.

Member AWA—UWL—UWA—AWI



NORFOLK, VA.

Serving—Va. Beach, Ft. Monroe, Newport News, Williamsburg and Tidewater Virginia.

Security Storage and Van Corp.

530 FRONT STREET

Norfolk's Finest Fireproof Furniture Warehouse

Motor Van & Lift Van Service

Collections—Distribution

Member—NATL F.W.A.—ALLIED VAN LINES

SALT LAKE CITY, UTAH

"This is the Place"

FOR BETTER SERVICE SECURITY STORAGE & COMMISSION CO.

230 S. 4TH WEST ST., SALT LAKE CITY 1

Over 37 Years' Experience

Merchandise Warehousing - Distribution
Sprinklered Building - Complete Facilities
Lowest Insurance Cost - A.D.T. Watchman Service
Office Accommodations - Display Space

Represented by American Chain of Warehouses, Inc.

New York Chicago
250 Park Ave. 83 W. Jackson Blvd.

MEMBER:
A.W.A.—U.W.A.



NORFOLK, VA.

Established 1892

SOUTHGATE STORAGE COMPANY, Inc.

239 Tazewell St., Norfolk 10

For economical storage and distribution you will want to know more about our individualized services. Our fireproof warehouses are in the Southgate Terminal, on the waterfront and in the center of Norfolk's wholesale district. Served by all rail, water and motor lines.



Write for Booklet—"7 POINT DISTRIBUTION"

NORFOLK, VA.

MEMBER



HOUSEHOLD AUTOMOBILE STORAGE

NEW-BELL STORAGE CORPORATION NORFOLK, VIRGINIA

MODERN SPRINKLER EQUIPPED WAREHOUSE
55,000 SQUARE FEET PRIVATE RAIL SIDING
Lowest Insurance Rate in Norfolk. Pool Car Distribution

WE SPECIALIZE IN MERCHANDISE STORAGE AND DISTRIBUTION

AGENTS AERO MAYFLOWER TRANSIT COMPANY

Member N.W.A. & S.W.A.

RICHMOND, VA.

64 Years of Uninterrupted and Expert Service

BROOKS TRANSFER AND STORAGE CO., Inc. 1224 W. Broad Street, Richmond, Va.

Three Fireproof Storage Warehouses—510,000 Cubic Feet Floor Space—Automatic Sprinkler System—Low Insurance Rates—Careful Attention to Storage—Packing and Shipping of Household Goods—Private Railroad Siding—Pool Car Distribution—Motor Van Service to All States—Freight Truck Line.

Member of N. F. W. A.—A. V. L.—A. T. A.

RICHMOND, VA.

STORAGE
HOUSEHOLD
GOODS
OBJECTS of ART
FURS - RUGS
VALUABLES

THE W. FRED RICHARDSON
Security Storage Corporation
PACKING FOR SHIPMENT
Local and Long Distance Movements
ESTABLISHED 1897
Agent for Allied Van Lines, Inc.

RICHMOND, VA.

160,000 Sq. Ft. Space
VIRGINIA BONDED WAREHOUSE CORPORATION
ESTABLISHED 1908 1709 E. CARY ST.
U. S. BONDED & PUBLIC WAREHOUSES
MERCHANDISE STORAGE & DISTRIBUTION
INSURANCE RATES 20c PER \$100 PER YEAR
Member A.W.A.
BUILDINGS SPRINKLERED

ROANOKE, VA.



H. L. LAWSON & SON
Finance and Storage
Pool Car Distributors
General Merchandise Storage
421-25 EAST CAMPBELL AVE.
ROANOKE, VIRGINIA

ROANOKE, VA.

ROANOKE PUBLIC WAREHOUSE
Capacity 500 Cars
Private Railroad Siding
Automatic Sprinkler
Accurate Accounting
We make a Specialty of Storage and Pool Car Distribution
for Agents, Brokers and General Merchandise Houses.
Member of American Chain of Warehouses

ABERDEEN, WASH.

Established 1916
A. A. STAR TRANSFER CO., Inc.
321 W. STATE ST.
Merchandise & Household Goods Storage
Private siding. Pool car distribution. Sprinklered
shipments via any railroad. Open yard storage.
Long distance moving.
Member of A.W.A.—May.W.A.



SEATTLE, WASH.

EYRES TRANSFER & WAREHOUSE CO.
A Seattle Institution—54 years of outstanding service
Cartage — Distribution — Storage
Highest financial rating; new fireproof, A.D.T. sprinklered
buildings; lowest insurance rate (10.2c); modern equipment.
"The Shippers' Open Door to Alaska and the Orient"

SEATTLE, WASH.

LET LYON GUARD YOUR GOODS
LYON
VAN AND STORAGE CO.
Carload Distributors
PORTLAND, Ore. SEATTLE
2311 N. W. Western Rd. 2030 Dexter Ave.
Walter Hultquist, Mgr. Dean McLean, Mgr.

SEATTLE, WASH.

J. R. GOODFELLOW, Pres.
OLYMPIC WAREHOUSE & COLD STORAGE CO.
MERCHANDISE STORAGE & DISTRIBUTION
1203 Western Avenue Seattle, Wash.
Cold Storage — Dry Storage — Rentals — Pool Car Distribution — Office Rentals
Fireproof, brick const.; Sprinkler system; Insurance rate: 12.5c. Siding connects
with all rail lines.
Bonded U. S. Customs; State License No. 2.
Member of A.W.A. (C.S.) Wash. State Whma. Assoc.

SEATTLE, WASH.

Lloyd X. Coder, Pres.-Mgr. Est. 1919
SYSTEM Transfer & Storage Co.
2601-11 Second Avenue
Warehousemen & Distributors of
General Merchandise and Household Goods
Office and Desk Space—Low Insurance Rates
Member—A.W.A.—W.S.W.A.—N.F.W.A.—S.T.O.A.

SEATTLE, WASH.

TAYLOR-EDWARDS
Warehouse & Transfer Co., Inc.
Free switching service—Low insurance rates—A.D.T. Service,
Associated with leading warehouses through
DISTRIBUTION SERVICE, INC.
New York Chicago San Francisco
Members of—American Warehousemen's Assn.: Washington State
Warehousemen's Assn.

SEATTLE, WASH.

Post graduates in moving personnel
SEATTLE TERMINALS
UNIVERSITY WAREHOUSE, INC.
1017 EAST 40TH STREET, SEATTLE
Exclusive agent for Mayflower vans. Seattle's finest, most modern
warehouse for the handling of household goods and personal
valuables. Located in Seattle's fast-growing University district.
Serving Sand Point Naval Air Base.
R. G. CULBERTSON, President
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The SPOKANE TRANSFER & STORAGE CO.
308-316 PACIFIC AVE.
THE INLAND EMPIRE'S LARGEST DISTRIBUTORS
MEMBERS: AWA-ACW-WSWA

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Pacific Storage and Transfer Co.
Drayage Storage Distribution
Forward Stop in Transit and Pool Cars
In Our Care
Located in Center of Wholesale District
Nearest Distributing Point
(To) Fort Lewis, Camp Murray, McChord Field
Member AWA-ACW-Wash. State Assn.

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TERMINAL WAREHOUSES, INC.
MDSE. WAREHOUSING and DISTRIBUTION
Concrete and Steel Warehouse located on N.P.R.R.
Tracks. Close to all Railway and Motor Freight
Terminals. Special Lockers for Salesmen's Samples.
Swift and Frequent Service to Fort Lewis, McChord
Field and Bremerton Navy Yard
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Every facility for you and your patrons'
convenience to secure your share of this
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THE W. J. MAIER STORAGE COMPANY

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BUCHERT TRANSFER LINE
500 North Superior St.
Merchandise and Household Goods Storage
Pool Car Distribution
Motor Freight Terminal for
Royal Transit Inc., Pope Bros. R. T. C.,
Wesley Freight Line, Steffe Freight Line
Chicago Northwestern siding, free switching
Member May.W.A.



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Owner, Harry H. Leag

Est. 1920

HARRY H. LONG MOVING & STORAGE MERCHANDISE - HOUSEHOLD GOODS - MOTOR FREIGHT



Pool Car Distribution Sales Representation
Brick building equipped for economical storage and distribution. Reached by C&NW—Soo-CM&StP.
Motor Freight Terminal Members of WisWA—N.F.W.A.



115 So. Walnut St.

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Established 1903

LEICHT TRANSFER & STORAGE CO.

Main Office: 123 So. Broadway, Green Bay, Wis.
New York Office: Interlake Terminals, Inc., 271 Madison Ave.
Marinette Office: 1720 Pierce St., Marinette, Wis.

Merchandise Storage
Pool Car Distribution
Transit Storage
Household Goods Storage
Heated—Unheated—Yard Storage
Waterfront Facilities
Stevedore Services

U. S. Customs, State and Public Bonded
30 Car Track Capacity
Modern Handling Equipment
Private Siding on C&NW, CM&StP, G&W Lines
Reciprocal Switching all lines

Complete local and over-the-road truck services with 70 units of all types of equipment, including low-bed trailers, winches and cranes.

Aero-Mayflower moving and storage.

Inquiries invited

Member: A.W.A.—Wis. WA—Mayflower WA

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Established 1911

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221 Phoebe Street, Green Bay, Wisconsin

MERCHANDISE & HOUSEHOLD
GOODS STORAGE

Pool Car Distribution

Private siding, G.B. & W. R.R. Reciprocal Switching
Member AWI NFWA



MADISON, WIS.

LOW INSURANCE RATE

CENTRAL

STORAGE AND WAREHOUSE COMPANY

COLD STORAGE
DRY STORAGE
FREEZER STORAGE

612 W. Main St.

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Established 1888

Reynolds Transfer & Storage Co.

725 E. Mifflin St.

Merchandise and Household Goods Storage Pool Car Distribution

Haulers of Contractor's Equipment and Heavy Machinery to all points.
Private Siding Chicago & Northwestern R. R.

Reciprocal switching
Agent Greyvan Lines



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MILWAUKEE'S ONLY DOCK WAREHOUSE
ON JOINT TRACKS CM&StP&RR AND C&NW

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MILWAUKEE, WIS.

— UNEXCELLED —

WAREHOUSING AND DISTRIBUTION FACILITIES
POOL CAR DISTRIBUTION - STORAGE IN TRANSIT

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FACILITIES FOR DRUMMING BULK OILS FROM
TANK CARS

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New York—Chicago—San Francisco

MILWAUKEE, WIS.

ESTABLISHED 36 YEARS

850 Foot Dock

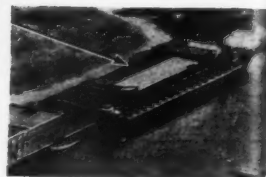
HANSEN
STORAGE CO.

Largest in Wisconsin

18 Warehouses

A.D.T. Service

Specializing in—
Merchandise Distribu-
tion and Complete Branch House Services
TRACK CAPACITY FOR 50 CARLOADS
DEPENDABLE EXPERT QUICK SERVICE



Transportation Tax

Following are recent rulings of the Bureau of Internal Revenue respecting the application of the Transportation Taxes reported recently by the Southwest Warehouse and Transfermen's Assn., Fort Worth, Texas.

“Tax does not apply to amounts paid as transportation charges on shipments of tobacco, cigarettes, or oleomargarine delivered to bonded warehouse for ultimate exportation or consigned to commanding officers at Quartermaster depots of United States armed forces if so shown on the bill of lading.”

“Tax does not apply: To amounts paid as transportation charges when the bill of lading shows that shipments are consigned to (1) collector of customs at the port, or (2) to officers of the United States armed forces at port of embarkation or exportation, and no temporary exemption certificate is required to be filed with the carrier.

“Tax does apply: To amounts paid for transportation of tax-free shipments

consigned to ‘sea stores’, since such shipments are not considered as being for export because they are not intended for export to a foreign country or for shipment to a possession of the United States.”

The Tax does apply to all tariff charges applicable to the actual transportation of property, that is, charges accruing from the time of pickup until a delivery is completed. But the tax is not applicable to the tariff charge made for temporary storage when ordered by shipper, but the tax does apply to the in-handling and out-handling charges in connection with temporary storage. These latter services are considered as a part of the transportation handling. Charges for packing and unpacking performed before and after transportation are not taxable.

Over-Taxed Facilities Cause Loading Delays

Loading delays at war plants is in many cases caused by large plants try-

ing to operate 24 hours a day with shipping and receiving facilities designed for eight hours, according to the department of Commerce in a report prepared by Robert L. Whaley of Cleveland. A further cause, the report said, is that plants often put on an embargo without notifying the shipper, with the result that the material must be stored on the truck or taken to the terminal. Driver identification delays, likewise, slow up turnaround of trucks.

Some truckers, because of volume of business handled, the report declares, are putting embargoes on interline freight, giving preference to particular companies and big loads. This means piling up of freight at the docks. A case in point is a load of 30,000 pounds of aluminum which was held up for three days in Cleveland for lack of a carrier to take it to Detroit. Had the shipment been given to a carrier operating through to final destination, the delay could have been avoided, report said.

More Trucks in California Than Are Registered

An analysis of California truck statistics discloses that a peculiar situation prevails in that there are actually more trucks in the state than the official registration totals indicate. The number of ODT war certificates issued is actually greater than the officially designated licensed trucks.

The situation arises from the fact that in California a commercial vehicle is not regarded as being in that classification except when its unladen weight totals 3,000 lb. or more, or it is used in for-hire traffic. As a result, several thousand vehicles in the station wagon and light-truck class are registered merely as "motor vehicles," pay no weight fees and carry no commercial vehicle license plates.

The conflict in State and ODT statistics was brought about when ODT, for

purposes of issuing certificates to truck owners, designated commercial vehicles as including all units used for transportation of persons or property for hire, including station wagons from which the seats have been removed to carry property. (Herr)

Barges to Speed Freight In San Francisco Bay

Following efforts of the California State Harbor Commission, the local Longshore Union and the Bay Area Maritime Committee, San Francisco Bay is to have the assistance of barges in the handling of freight into and out of ships. A number of conferences have been held on the matter, and methods, of barge utilization, types of barges, and how and where to get them. A definite plan of action for providing barge service on San Francisco bay is now being worked out.

Germaine Bulcke, an official in the Longshoremen's Union (CIO) recently reported to the U.S.M.C. on behalf of the barge proposal, that 3,500 manhours a month were being lost due to inefficient freight handling. At a meeting of the Bay Area Maritime Committee's subcommittee on barges, Bulcke testified to the following effect: It ordinarily takes longer to unload cargo in hatches just behind the engine room (booby hatches) than in the box hatches forward, work that entails running a string of cars down the dock apron. As a consequence, gangs working hatches adjacent to those cars may lose several hours' time while waiting for the operations at the slower hatches. The proposal is to use barges to do loading from the offside of the vessel, thus effecting considerable savings in manhours. Proponents of the use of barges claim that plenty of barge equipment, now being put to "fractional use" is already available to make a start. (Gidlow)

MILWAUKEE, WIS.



LINCOLN

FIREPROOF WAREHOUSE CO.
WAREHOUSE SERVICE | RAILROAD SIDINGS
OF EVERY DESCRIPTION | DOCKING AND
LOCATED IN HEART OF BUSINESS DISTRICT
OFFICES: 206 W. HIGHLAND AVE.
Member of A.W.A.—W.W.A.—N.F.W.A.

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M. A. RAWLINSON, Pres. & Gen. Mgr.

M. RAWLINSON, Ltd.

Established 1885 610 YONGE ST.
Seven Buildings to Meet All Requirements for Modern
Storage and Distribution
Customs Bonded. Pool Car Distribution. Household
Goods Moved, Packed, Shipped and Stored.
Members of CanS&T—NFWA—BAIFR—FWRA—TC&W—ALLIED VAN LINES

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Tel. Mitchell 5644

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Automobile storage. Warehousing on unit basis for spot stocks. Storage
"in transit". Pool car distribution, Customs Bonded.
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TORONTO, ONTARIO

TERMINAL WAREHOUSES LIMITED

Located on Toronto's Harbour Front in the heart of Industrial Ontario
COMPLETE MODERN STORAGE AND
DISTRIBUTION FACILITIES

Dry Storage Cold Storage Bonded Storage
Office and Light Manufacturing Space Lowest Insurance
Field Warehousing

MILWAUKEE, WIS.

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National Warehouse Corporation



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— STATE BONDED —
EVERY CONCEIVABLE
WAREHOUSE & DISTRIBUTION
SERVICE AFFORDED
A.D.T. Service
468 E. Bruce St.
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St. Lawrence Warehouse Inc.

3-VAN HORNE AVENUE, MONTREAL, CANADA
200,000 SQ. FT. OF MODERN FIREPROOF SPACE
LOCATED IN THE EXACT CENTER OF THE CITY
OF MONTREAL
Canadian Customs Bond. Private Siding—4 Car
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Cooler, Freezer and General Merchandise Storage
Deep Water Dock, Private Siding
on C.M.&St.P. & P. R.R.

MONTREAL, QUEBEC



Westmount Transfer & Storage Ltd.

205 Olivier Ave., Westmount, P. Q.
LOCAL AND LONG DISTANCE MOVERS
Private Room System for Storage
CRATING, PACKING and SHIPPING
Charges Collected and Promptly Remitted
Member: N. F. W. A., C. B. & T. A.

SHEBOYGAN, WIS.



SHEBOYGAN

Warehouse & Forwarding Co.

A Merchants & Manufacturers Warehouse
11th and Illinois Ave. Sheboygan, Wis.

Member of May. W.A. Wis. W.A.

WHAT SHIPPERS THINK . . .

If you want to know what shippers think
about the truck-trailer situation see page 44.
It's impressive.

MOTAIRBUTION . . .

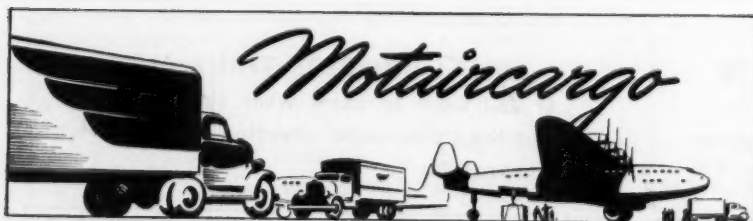
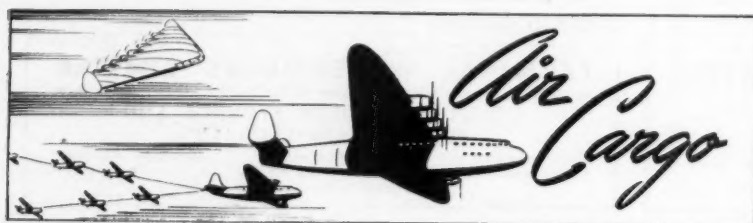
the distribution of tomorrow!

AS a publication devoted to the distribution of raw materials and finished products it was proper and logical that D and W should have been the first trade paper to recognize air cargo and to publicize its potentialities to shippers and carriers on whom its growth depends.

It has been our sincere conviction these past two years that the runner-up in speed and flexibility, motor transportation, is the most suitable feeder service.

"Motairbution", the transportation of goods by a combination of motor and air carrier facilities for national or international distribution, was coined by D and W and published for the first time in its June issue. The word was inspired by "Motorbution", coined for The Manhattan Storage & Warehouse Co. of New York by Bob Warren. We gratefully acknowledge Manhattan's courtesy in sanctioning our adaptations.

The illustrations below in the future will grace our three-a-month series of educational ads in SRDS and in a subsequent issue of D and W we shall define all of the following newly coined words:



FRIGAIRBUTION

FRIGAIRCARGO

FURNAIRCARGO

GLIDERBUTION

GLIDERCARGO

HELICARGO

MOTAIRBUTION

MOTAIRCARGO

MOTAIRHANDLING

RAILAIRCARGO

SHIPAIRCARGO

TRAILAIRCARGO

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